Guidelines for the Management and Handling of Used Oil

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Foreword

Why do we need guidelines for the management and handling of used oil?

These guidelines have been produced because there are no specific regulations for the management of used oil in New Zealand. Appropriate procedures and facilities must be available if the large volume of used oil generated in this country is to be handled and disposed of in ways that are safe and environmentally sound.

The guidelines provide guidance to used oil generators, collectors, transporters, re-refiners and end users and regulatory authorities on the formulation of used oil management strategies.

They are intended to complement and be read in conjunction with the Dangerous Goods Act 1974 and its Regulations, the Health and Safety in Employment Act 1992, and the Resource Management Act 1991. The guidelines do not replace or supersede any legislative requirements, but they do provide additional guidance on how workplace health and safety and the broader environment can be protected from the hazards of used oil. The guidelines are not intended for use as a technical specification.

How do the guidelines affect you?

If mishandled, used oil can be a workplace and environmental hazard. If contaminated with flammable liquids, it also has to be treated as a Class 3 Dangerous Good. The guidelines provide advice and information for workplace managers. They will assist you to meet your responsibilities under the Dangerous Goods Act and to maintain a safe, healthy workplace.

The guidelines also spell out what we see as responsibilities applying to retailers of lubricating oil, to home mechanics, and to other people who handle used oil. We hope to encourage everyone who works with used oil to do so safely and in an environmentally acceptable way.

Who prepared these guidelines?

The guidelines were developed by representatives of the following organisations and interest groups, other key interest groups provided comment as requested. The guidelines reflect the collective experience and expertise of the people involved in the management of used oil in New Zealand, especially with respect to balancing risk and practicality:

Oil companies
Motor Trade Association
New Zealand Chemical Industry Council
Milburn New Zealand
Environmental Risk Management Authority
Used oil transporters
Ministry for the Environment
Occupational Safety and Health Service.

The guidelines have been endorsed by the Chief Inspector, Explosives and Dangerous Goods, Occupational Safety and Health, Department of Labour. They will be updated as necessary to reflect requirements of the Hazardous Substances and New Organisms Act 1996, and as technology improves. They will be reviewed at least every five years by the representatives of the groups that have contributed to their preparation.

Implementation date

The provisions contained in the body of the document become effective on 1 April 2001. The Appendix 1 provisions relating to oil tank size and location come into effect as new sites are developed, when existing oil tanks are replaced, or when drainage or other major site work is undertaken on existing sites.

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1 Definition of used oil

Used oil is defined as:

> *any oil that has been refined from crude oil, or any synthetic hydrocarbon oil, that has been used, and as a result of such use, has become unsuitable for its original purpose due to the presence of impurities or the loss of original properties*.

Used oil can be derived from any one of the products in List A, or be a mixture of these products. Generally these products will have a flash point (closed cup) above 60.5^{o}C.

1.1 List A

- Engine oil – typically includes crankcase oils from gasoline, diesel and LPG/CNG engines
- Brake fluid
- Gear oils
- Transmission fluids
- Hydraulic oils and fluids
- Compressor oils
- Refrigeration oils
- Industrial process oils
- Electrical insulating oil – except oil likely to contain PCBs
- Neat metalworking fluids and oils – these must not be diluted with water or any product from List B
- Heat transfer oils.

Used oil does not include any of the products in List B or a mixture of products in Lists A and B**.**

1.2 List B

- Petroleum distillates used as solvents, such as turpentine, kerosene, parts washings
- Petrol and/or diesel – including mixtures from refuelling errors
- Antifreeze, radiator flushing, or other inhibitor packages (eg, stabilising coolant additives (SCAs))
- Oils derived from animal or vegetable fats and oils – including those used as a lubricant
- Bottom clean-out waste from virgin fuel storage tanks, virgin fuel oil spill clean-ups, or other oil wastes that have not been used

- Ship's slops, bilge water, tank cleanings produced by vessels during normal shipboard operations, whether or not they include used oil
- Paint and paint brush washings
- Chlorinated oil or solvents
- Any virgin or used oil which may contain PCBs.

Many, although not all, of the products in List B will have a flash point (closed cup) below 60.5^{o}C. Regardless of flash point, List B products should not be mixed with List A products and then disposed of as used oil.

If used oil becomes contaminated with products from List B, the resulting product will usually become unsuitable for collection by an authorised used oil collection agent (see Section 6). (Small amounts of **some** List B products such as vegetable oils may not greatly change the actual properties of the List A products. However, mixing of List A and List B products is strongly discouraged as there is no guarantee that the resulting mixture would be suitable for used oil collection.) If used oil becomes contaminated with List B products, used oil collectors should consult their Local Authority Dangerous Goods Inspector for advice on how to manage the waste.

Note: Disposing of hazardous waste can be costly. The only way to be sure used oil does not become contaminated with hazardous waste is to never mix it with anything else, and store used oil separately from all solvents, chemicals and other incompatible products.

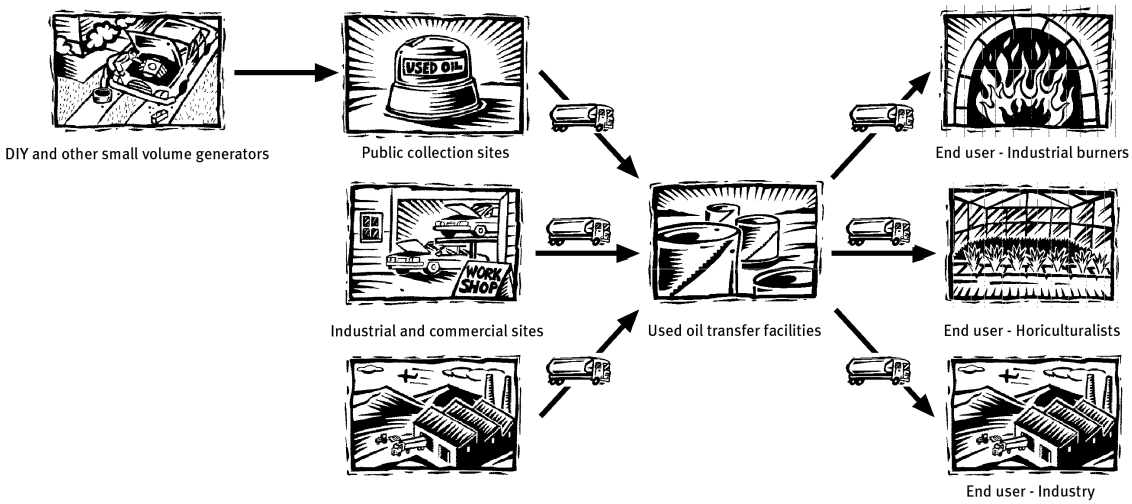
2 The used oil collection system

The New Zealand used oil collection system can be divided up as follows:

- small volume generators
- public collection points
- industrial/commercial sites
- transportation and collection agents
- used oil transfer facilities and/or tank farms
- processors
- end users (eg, cement kiln) or disposal services.

Figure 1 illustrates how the flow of used oil typically moves through the recovery system.

THE FLOW OF USED OIL THROUGH A COLLECTION SYSTEM



The effective collection and transport of used oils from the point of generation to recycling or end-use locations is essential if used oil is to be utilised or disposed of in an environmentally acceptable and safe way.

The following sections of these guidelines address each of the components of the used oil collection system and provide advice to the relevant parties on their roles and responsibilities with regard to used oil in New Zealand. The aim is to:

- prevent contamination of used oil with inappropriate products
- encourage small volume oil generators to deliver their used oils to local collection centres
- encourage retail outlets which sell lubricating oils to arrange for used oil collection facilities to be available to their customers and the general public
- encourage the provision of publicly available collection facilities in small municipalities and rural areas that are inadequately served by retail outlets selling lubricating oils
- provide safe and efficient collection and transportation procedures for used oil

- set out the operational, testing, equipment and tracking procedures to be used by any party aggregating used oil in a transfer or tank farm facility
- provide guidance and information to all generators of used oil on what is and what is not an appropriate use for used oil
- ensure the safe handling of used oil by recyclers and end users.

3 Small volume generators

Many people buy small amounts of virgin oil to use at home. Collectively this ends up generating significant volumes of used oil. This section of the guidelines aims to provide information to these "small volume generators" on how to handle and what to do with their used oil. It will also be of interest to organisations such as local authorities, which may field enquiries from the public.

3.1 Definition of a small volume generator

Small volume generators are those oil users who have very little or no on-site used oil storage, and accumulate volumes of less than 20 litres of used oil at any one time. The large numbers of private motorists who change their own oil fall into this category.

3.2 What are your responsibilities?

People who maintain their own vehicle(s) and who change the engine and/or other oil(s) should comply with the following procedures:

- Place a drip pan directly under the vehicle's oil pan plug to collect as much as possible of the used oil and to prevent spills, before draining oil from the sump.
- If you are changing your oil filter, loosen the old filter (use a filter wrench if necessary), then spin it off and drain as much oil as possible into the drip pan. Place the filter upside down in an ice cream container or similar dish. Drain for 24 hours. Add the used oil to what you already have in your collection container. If you can, take the old filter to your local scrap metal collection point. If you don't have any other alternative, wrap the filter in newspaper and dispose of it through your domestic waste collection.
- Pour the used oil into a clean, empty container with a tight lid (eg, the plastic container the clean oil was supplied in)**. DO NOT MIX IT WITH ANY OTHER SUBSTANCE.**
- Take the used oil to your nearest used oil public collection site (see Section 3.3).

3.3 Where do you take your used oil?

The next stage – disposing of it – takes more effort, but is essential for the safety of the environment. You now need to take your used oil to a used oil public collection site. In New Zealand there are a variety of different used oil public collection sites available. They are typically located at:

- refuse transfer stations
- landfills
- oil retail/reseller sites such as;
  - service stations (these are the main collection point at present)
  - supermarkets
  - DIY stores

- auto accessory stores
- rural stock and station agents
- third party resellers.

The following methods of disposing of used oil are **inappropriate** and may **be against the law** due to the actual or potential adverse environmental impacts:

- unauthorised dumping on the ground, or into watercourses, sewers or drainage systems
- burial
- using untreated used oil for dust control, weed abatement, vegetation control, timber preservation by painting, staining or dipping, pest control or as a carrier fluid for agrichemicals (pesticides or herbicides)
- use as a marker, eg, on playing fields
- unauthorised road oiling
- placing used oil in rubbish bins to be collected as part of household waste
- open-air burning
- any other practices in which the used oil may cause contamination of the ground and ground water, migrate to watercourses, or have negative impacts on humans, plants, animals or other organisms.

Regional councils are responsible for determining what discharges to the environment are permitted within their regions. If you have any queries about disposing of used oil through, for example, spreading it on roads, you should contact your regional council for advice.

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4 Public collection sites

For the collection of used oil from small volume generators to be effective, there needs to be an appropriate number of public collection points available. This section aims to encourage retailers of virgin oil to the public to recover the used oil, and local authorities to take a more proactive role in used oil collection. It also provides a guide on what is required to comply as a used oil public collection site.

4.1 Definition of a public collection site

Any site or facility that accepts/aggregates and stores used oil collected from small volume generators is a public collection site. These sites may be:

- refuse transfer stations
- landfills
- service station forecourts
- oil retail/reseller sites such as:
  - service stations (these are the main collection public collection points at present)
  - supermarkets
  - DIY stores
  - auto accessory stores
  - rural stock and station agents
  - third party resellers.

Note: While service station forecourts are the most common places for public collection at present, the working group involved in the development of these guidelines aims to encourage the provision of collection domes by other retailers on other appropriate sites. (Please see below.) The intention is to encourage the development of a comprehensive network of safe, accessible collection points.

4.2 What are your responsibilities?

All retailers of oil are strongly encouraged to promote the reuse and/or recovery of their oil by posting a sign at the point of sale either advising the consumer that the outlet accepts used oil, or that you have made arrangements for another outlet to accept used oil on your behalf. This sign should comply with the specifications and wording set out in Appendix 1.

Oil retail/reseller sites

All sellers of oil in packages of 20 litres or less are therefore encouraged to:

- have facilities available to take back used oil at the point of sale at no charge to the consumer, or
- arrange for a third party within a 15 km radius in an urban area, and at an appropriate location in a rural area, to accept oil on their behalf, or

- prominently display the sign advising customers of recommended recovery arrangements for the site.

Local authorities

The new CAE guidelines[1] for landfill management recommend that separate collection facilities for used oil and for small amounts of hazardous liquids be provided at all landfills and transfer sites. The guidelines are backed by the Ministry for the Environment.

4.3 Classification of public collection sites

Used oil public collection points are classified as either **controlled collection** or a **general collection** sites based on the site manager's ability to prove that the used oil on site is not contaminated by other products. From 1 April 2000, all sites must have a Dangerous Goods licence, issued by the local Dangerous Goods Inspector. Classification is undertaken based on the following criteria.

Controlled collection sites

A used oil public collection point can be classified as a controlled collection site when the local Dangerous Goods Inspector is satisfied that:

- the site can demonstrate, by appropriate in-house procedures for handling used oil, that it is protected from receiving unwanted or contaminated oils (see Section 4.4)
- used oil at the site is stored in a container that complies with the minimum design specifications as set out in Appendix 1.

Classification is undertaken by the local authority Dangerous Goods Inspector.

General collection sites

Used oil public collection points that cannot show they are protected from receiving unwanted or contaminated oils will be classified as general collection sites. Storage equipment at these sites must comply with the Dangerous Goods (Class 3 – Flammable Liquids) Regulations 1985.

4.4 Management procedures for controlled sites

Controlled public collection sites must be able to show they are protected from receiving unwanted or contaminated oils by having the following management procedures in place on site and that staff are aware of them.

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[1] *Landfill Guidelines: Towards Sustainable Waste Management in New Zealand*. Centre for Advanced Engineering, University of Canterbury, 2000.

- A prominent sign is posted which advises people wanting to dispose of used oil to avoid contaminating it, lists the products that are not accepted (antifreeze, paints, solvents, gasoline and diesel), and says where unacceptable products should be disposed of.
- The operator visually inspects the oil, and rejects any that he or she suspects may contain something unacceptable.
- The site uses tanks designed exclusively for the purpose of storing used oils, which are able to be securely capped and locked (see Appendix 1 for appropriate types of tanks).
- The site provides written material about the used oil recovery programme it belongs to, and is generally proactive in promoting the programme to the community.
- Tanks are emptied by a used oil collection and transportation agent who complies with the guidelines in Section 6.
- Collection facilities are sited to prevent used oils from entering sewerage and stormwater systems, drainage channels and the natural environment.
- Storage facilities are regularly inspected to ensure a high standard of cleanliness and environmental management is maintained, and that regular collections are carried out.
- Storage facilities are formally audited annually, with records retained on site until the next audit. These audits will generally be internal (ie, conducted by storage facility staff).
- The site can demonstrate that it has a spill-response and clean-up plan, which includes up-to-date procedures for contacting clean-up contractors and notifying the relevant municipal authorities, staff awareness and having a spill kit available (see Appendix 3).
- If storage tanks become contaminated with hazardous materials, site managers should consult their Local Authority Dangerous Goods Inspector for advice or call a transporter able to handle Class 3 material and arrange for collection.

4.5 Removal of used oil

Removal of used oil aggregated at public collection points should only be done by a commercial collection agent who complies with procedures set out in Section 6. Records of all uplifts should be maintained on each site or available from the transporter for a minimum of three years.

5 Industrial and commercial used oil generators

Protocols for handling used oil from industrial and commercial operations are essentially the same as those described for public collection points. This involves collecting the maximum amount of used oil from your operations, storing it in an approved manner, and disposing of it in an appropriate way.

However, industrial and commercial generators have more complicated operations and need to take particular care to segregate used oils generated from different processes, and avoid contamination of oils on-site. This includes not contaminating segregated oil with any other oily fluid that may appear to be the same substance.

5.1 Definition of an industrial or commercial used oil generator

Industrial and commercial generators are defined as *those parties who in the course of their commercial operations generate or accumulate used oil*. They can be categorised into three main groups:

- automotive vehicle repair workshops
- industrial manufacturing operations
- other commercial operators.

Note: These are not public collection sites, as defined in Section 4.1.

5.2 What are your responsibilities?

As an industrial and commercial generator of used oil you have the responsibility to collect and store used oil in dedicated facilities (see below) designed, labelled and operated to minimise oil contamination and spillage. You should take all possible steps to avoid the used oil becoming mixed with other contaminants such as petrol, diesel, solvents, agricultural chemicals, water, or engine coolants. If contamination with hazardous substances does occur, you must arrange for immediate disposal of the contaminated product. This should be done through an appropriate transporter of hazardous wastes or as recommended by your Local Authority Dangerous Goods Inspector. (See Section 6.)

You should provide separate dedicated facilities for each of the main types of used oil:

- automotive engine lubrication and circulating oils – including engine oil, transmission fluids, ATF, final drive and drive-line fluids, brake fluids and power steering fluids, hydraulic oils, turbine oils, heat transfer oils, compressor oils, industrial gear oils
- used metal working/cutting oils – including neat cutting, grinding, machine, rolling, quenching and coating oils, and undiluted soluble metal-working fluids (these should never be mixed with anything)

- electrical insulating oils. If these contain PCBs or other chlorinated organics they must not be mixed with any other oil. If you suspect that the oil might contain more than 10 ppm PCBs, you should contact the Ministry of Health for advice on handling and disposal.

Industrial and commercial generators must ensure that their staff are made aware of the procedures for the storage and handling of used oil, and of the need to keep used oil separate from dangerous goods.

5.3 Classification of industrial and commercial collection sites

Industrial and commercial generators of used oil are classified as either a controlled collection site or a general collection site, based on the site manager's ability to prove that the used oil being collected on site has not been contaminated by other products. **From 1 April 2001, sites must have a Dangerous Goods licence,** issued by the local Dangerous Goods Inspector.

Controlled collection sites

Your operation can be classified as a controlled collection site if you can demonstrate to the satisfaction of your local authority Dangerous Goods Inspector that your used oil is not contaminated. This means being able to demonstrate that:

- the used oil comes from *closed systems*, that is, where there has been no likelihood of cross-contamination with other products during typical industrial (as opposed to automotive) processes such as refrigeration or hydraulic systems
- the procedures outlined in **Management practices for controlled sites** (see Section 5.4 below) are enforced at the site to ensure that only used oil (as classified in Section 1.1) is put into the site's used oil storage container
- used oil at the site is stored in containers appropriate for the purpose. For total amounts of up to 400 litres, the metal containers in which oil is supplied are adequate. Quantities of more than 400 litres must be stored in a container that complies with the minimum design specifications as set out in Appendix 1
- separate facilities are available for solvents and other dangerous goods.

General collection sites

If you cannot demonstrate that your site is protected from receiving unwanted or contaminated oils it will be classified as a general collection site. Storage equipment at such sites are required to comply with the Dangerous Goods (Class 3 – Flammable Liquids) Regulations 1985, specifically with reference to materials and isolation distances.

5.4 Management procedures for controlled sites

A controlled industrial and commercial site must be able to demonstrate that it adheres to the following in-house management procedures and protocols for handling used oil:

- A prominent sign is posted at an appropriate place on or near storage tanks advising staff to avoid contamination of used oil, listing products that are not accepted (petrol, diesel, antifreeze, paints, solvents), and indicating disposal points for unacceptable products.
- Sites collecting more than 400 litres of oil at one time use only tanks designed exclusively for the purpose of storing used oils, and all containers are able to be securely capped (see Appendix 1 for the appropriate types of tanks).
- The operator provides written material to staff about the appropriate procedures for handling used oil and oil filters.
- Tanks are emptied by an approved used oil collection agent (see Section 6).
- Collection facilities are sited to prevent used oils from entering sewerage and stormwater systems, drainage channels and the natural environment.
- Storage facilities are regularly inspected to ensure that high standards or cleanliness and environmental management are maintained and that regular collections are being carried out.
- Storage facilities are formally audited annually with records retained on site until the next audit. These audits will generally be internal (ie, conducted by storage facility staff).
- The site can demonstrate that it has a spill-response and clean-up plan, which includes up-to-date procedures for contacting clean-up contractors and notifying the relevant municipal authorities, staff awareness and having a spill kit available (see Appendix 3).
- If storage tanks become contaminated with hazardous materials, site managers should consult their Local Authority Dangerous Goods Inspector for advice or call a transporter able to handle Class 3 material and arrange for collection.

Oil filters

Used oil filters retain a surprising amount of oil. An undrained oil filter can contain anything from 300 to 1200 ml of used oil, depending on its size. Filters have been a hidden source of contamination of soil, surface water, and groundwater for decades. Three good methods for changing filters safely are:

- Drain and crush the filter (the greater the compaction, the more used oil removed) and either recycle or dispose of the filter biscuit or metal portion depending on scrap metal arrangements; or
- Drain, disassemble (eg, shred the filter), and send to a scrap metal recycler.
- Remove the filter hot from the vehicle, place it in a draining dish, gasket side down, puncture the dome end of the filter to defeat the anti-drawback valve function and allow it to drain for 12 to 24 hours. Send the filter to a scrap metal recycler.

5.5 Removal of used oil

Removal of used oil from industrial and commercial generator sites should only be done through a commercial collection agent who complies with procedures as set out in Section 6. Records of all uplifts should remain on site or available for a minimum of three years.

6 Transportation and collection

This section of the guidelines sets out the operational, testing, equipment and tracking procedures to be used by any party collecting and transporting used oil.

The guidelines require that transportation of used oil is subject to more rigorously controlled practices than storage at public and industrial/commercial collection points. The reasons for this are:

- the greater volumes typically involved
- the difficulties generators have developing precise characterisations of their used oils
- the increase in potential dangers with transportation as opposed to storage of goods.

6.1 Definition of a transporter

Used oil transporters are those parties who commercially collect used oil from more than one used oil generator or collection point and transport it to a used oil transfer site (as defined in Section 7.1). This does not include people who transport volumes of less than 20 litres from the point of generation to a collection site.

6.2 What are your responsibilities?

Used oil transporters are responsible for the safe and efficient collection and transportation of used oil from used oil public collection points or used oil industrial or commercial collection sites. These sites will typically require uplifts of volumes of 400 litres or more.

It is your responsibility to ensure that the used oil being collected is transported in a vehicle that meets the relevant criteria (see Section 6.3) for the type of site the products are being transported from – that is, either a controlled site or a general site.

You must issue an invoice/receipt to each site at the time of collection, or keep appropriate records for each site detailing the date and volume of used oil collected. If invoices are not provided, the site operator must subsequently have access to your collection records if required, for use as evidence of appropriate disposal.

If oil is accidentally discharged during collection and/or transportation, you must take appropriate immediate action to protect human health and the environment; for example, contain the spill by bunding the discharge area, notify local authorities and clean up the spill.

Before undertaking any used oil collection, all transporters are required to ensure that their vehicles are compliant with the standards set out below.

6.3 What type of vehicle is required?

The type of vehicle required to transport used oil depends on the classification of the site from which the product is to be uplifted.

Collections from controlled sites

Transporters collecting used oil in bulk from controlled sites where the oil is not contaminated by Class 3(a) or (b) products and can be guaranteed to have a flash point (closed cup) above 60.5^{o}C should comply with the general requirements set out below.

Collections from general sites

Transporters collecting used oil in bulk from general sites where there is a possibility of contamination with Class 3(a) or (b) products need to take extra precautions, and in addition to the general requirements vehicles must also comply with the following requirements:

- Dangerous Goods (Class 3-Flammable Liquids) Regulations 1985
- Flammable Liquids Tankwagon Code
- Land Transport Rule: Dangerous Goods 1999.

Note: It has been agreed with the New Zealand Fire Service and OSH that vehicles with product that could be contaminated with Class 3 material are to be labelled with UN Number "1993", Shipping name "Waste Flammable Liquid NOS", and Common Name "Used Oil, Hazchem 3[Y]". This information must also be stated on the Dangerous Goods Declaration.

6.4 General requirements for vehicles

1. All vehicles used in the collection of used oil must comply with all Land Transport Safety Authority requirements for commercial vehicles.
2. All collectors' equipment, sites, and personnel shall be of a clean and neat appearance to a standard expected of a professional collection service.
3. All collection vehicles are to carry a Tanker Spill Kit for cleaning up any minor spillage (see Appendix 3 for a recommended kit).
4. Any spillage of used oil at a customer site is to be cleaned up by the driver of the vehicle using the vehicle's spill kit. If the spill is greater than can be handled by the spill kit, the driver will wait at the site until a clean-up crew has arrived and responsibility for the clean-up can be handed over to them.
5. All vehicle hoses are to be plugged or capped when not in use. All suction pipes are to be stored in an enclosed leak-proof container or locker complete with a drain point so that it can be drained of product if necessary.
6. All tankers should work on a no-product-to-ground policy.
7. All drivers must undergo appropriate training for tanker work, and this **must be documented.**
8. All drivers must have the appropriate current driving licence for the vehicle they are driving, and this licence must have a Dangerous Goods endorsement.

Vacuum tankers

Vacuum tankers are **not recommended** for collecting used oil at general sites. Even in controlled sites the driver should check to ensure that Class 3(a) or (b) product has not inadvertently been disposed of in the tank.

Vacuum tankers may be used for Class 3(a) or (b) product only after specific approval for the tanker has been obtained from the Chief Inspector of Dangerous Goods. The office of the Chief Inspector of Explosives and Dangerous Goods, Occupational Safety and Health, Department of Labour, will provide specification requirements for vacuum tankers used for oil collection.

6.5 Collection operations

Site audits

If you are going to collect used oil from a collection site you need to know that what you are collecting is in fact used oil, and not a hazardous waste or other product that would require transport by a different type of vehicle (see Section 6.3). To do this you will need to conduct a pre-collection audit of the site. The site will then be added to your collection database as either a controlled or a general collection site (see Sections 4.3 and 5.3).

The site inspection should cover the following areas:

- storage equipment
- site management procedures
- general site tidiness
- potential hazards.

After accepting that the site meets the criteria for collecting used oil in a manner you can comply with, you and the site operator will agree on an appropriate collection service schedule for the site.

Static electricity

Static electricity is a problem when pumping petroleum products. The following precautions should be taken whenever petroleum products are pumped.

- Always earth road vehicles before loading or unloading petroleum products. This can be done by having a loading or unloading hose that is electrically continuous, or by using a separate static strap that can be attached – before pumping commences – to the tank being loaded or unloaded. The tank must be earthed.
- Avoid splash loading into empty vehicles by ensuring that the fill pipe reaches as near to the bottom of the tank as possible.
- Avoid pumping water and air with petroleum products.
- Maintain a slow loading rate until the fill pipe on the receiving vessel is covered by at least 100 mm.

Load testing

Each full load of used oil must undergo flash point testing before delivery to a used oil transfer facility, to ensure that contaminants are not present in the load. If the flash point of the load is below 60.5^{o}C, the sites from which the load was collected must be notified, and follow-up procedures must be followed. (See Appendix 2.)

Tracking

Acceptance

As a used oil transporter you must keep a record of each used oil shipment **accepted** for transport. Records for each shipment must include:

- the name and address of the transporter and whoever provided the used oil for transport
- the ID number (if applicable) of the transporter and whoever provided the used oil for transport
- the date of acceptance of the used oil
- a description of the product/waste being transported
- the quantity of product accepted
- the signature, dated on receipt of the used oil, of a representative of whoever provided the used oil for transport.

Delivery

As a used oil transporter you must keep a record of each shipment of used oil that is **delivered** to another used oil transporter, user or transfer facility. Records of each delivery must include:

- the name and address of the receiving facility or transporter
- the ID number (if applicable) of the receiving facility or transporter
- the date of delivery
- the quantity of used oil delivered
- the signature, dated on receipt of the used oil, of a representative of the receiving facility or transporter.

Record retention

The records described in the tracking and load testing paragraphs above are to be maintained by the transport operator for a minimum of three years.

6.6 Disposal of used oil

Disposal/unloading of used oil collected must only be to a site that meets the criteria for a used oil transfer station (see Section 7).

7 Used oil transfer and tank farm facilities

This section of the guidelines sets out the operational, testing, equipment and tracking procedures to be used by any party aggregating used oil in a transfer or tank farm facility.

7.1 Definition of transfer/tank farm facility

A used oil transfer and tank farm facility is defined as *any facility at a site which is not a used oil generator [as defined in Sections 3.1 and 5.1] that receives and aggregates used oil from used oil transporters [as defined in Section 6.1] for subsequent additional transportation, processing, re-refining or disposal.* Activities at transfer or tank facilities may include the incidental processing of used oil through, for example, stripping water from loads and/or from storage tanks.

Typically, facilities are likely to receive used oil from used oil transporters in volumes greater than 5000 litres.

The guidelines recognise that aggregation of used oil at transfer facilities or tank farms should be subject to more rigorously controlled practices than for either virgin oil stored at commercial operations or used oil storage at public and industrial/commercial collection points. The reasons for this are:

- the increase in potential danger because greater volumes are typically stored at such sites
- the likelihood that such sites will sometimes receive contaminated product
- in New Zealand there is a strong possibility that the used oil handled at such facilities will be sent for disposal by burning.

7.2 What are your responsibilities?

It is the responsibility of owners and operators of used oil transfer/tank farm facilities to maintain and operate them to minimise the possibility of fire, explosion, or any unplanned sudden release of used oil to the air, soil or surface water, which could threaten human health or the environment.

Each site must comply with all relevant requirements under the Dangerous Goods Act 1974 and Regulations, the Resource Management Act 1991, the Hazardous Substances and New Organisms Act 1996 and any relevant local by-laws and regulations.

7.3 Storage facilities and operations

Owners and operators of used oil transfer/tank farm facilities must comply with the following requirements:

Tankage

1. All tanks are to be made from steel.
2. All tanks are to be padlocked shut when not in use.

3. All tanks are to be bunded. The bund must equal or exceed the volume of the largest tank in that bunded area.
4. The bund floor must be concrete or asphalt, not soil, clay or gravel.
5. All tanks are to be inspected on a regular basis for worthiness.
6. All tanks are to have some method to determine the volume in each tank.
7. All tank maintenance is to be recorded and kept for five years.
8. An ullage of 5 percent must be left when the tank is full.
9. At each site the operator is to have a minimum amount of storage capacity on site classified as Class 3(a) to allow for discharge from the largest capacity of a vehicle that may be received, in the event of a contaminated load.
10. The vehicle discharge area is to be bunded. The bund must equal or exceed the volume of the largest compartment of any vehicle to be discharged.

Operations

During loading and unloading a staff member must be in attendance at all times.

Tracking

All sites are to keep records of incoming oil by date, volume, source and flash point. Records of oil going off site should indicate date, volume, and destination.

Spill/contingency procedures

Each site must have and keep up to date the following:

- a spill contingency plan
- spill control equipment
- a fire plan
- an evacuation plan
- Hot Load Handling Management/Management of Class 3(a) facilities.

Record retention

Records of volumes in and out of each tank must be kept for a period of three years.

8 Recycling users and processing/disposal plants

This section of the guidelines is aimed at any parties who run significant operations for processing, re-refining or disposing of used oil. It does not apply to transporters who carry out incidental processing operations on used oil during the normal course of transportation, as provided for in Section 6 (eg, stripping water from loads and/or storage tanks).

8.1 Definition of recycling, processing and disposal plants

Used oil recycling, processing or disposal plants are *any facilities which either generate used oil or receive and aggregate used oil from used oil transporters [as defined in Section 6] for subsequent processing, re-refining or disposal.*

Typically this would entail facilities that engage in physical operations designed to produce from used oil, or to make used oil more amenable for production of fuel oils, lubricants or other used oil-derived products. Processing includes, but is not limited to, any mechanical or chemical treatment, as well as blending used oil with virgin petroleum products.

8.2 What are your responsibilities?

It is the responsibility of owners and operators of used oil recycling, processing or disposal plants to maintain and operate them so as to minimise the possibility of fire, explosion, or any unplanned sudden release of used oil to air, soil or surface water which could threaten human health or the environment.

Each site must comply with all relevant requirements under the Dangerous Goods Act 1974 and Regulations, the Resource Management Act 1991, the Hazardous Substances and New Organism Act 1996 (when it comes into force for hazardous substances), and local laws and regulations.

As the operator of a used oil processing, re-refining or disposal site, you are also required to comply with all the sections of these guidelines that relate to the different parts of your operations, such as storage (see Section 7), and transportation (see Section 6), if you undertake these as part of your processing, re-refining or disposal activities.

8.3 Storage facilities

Owners and operators of recycling, processing or disposal plants with storage facilities must comply with requirements for these facilities as set out in Section 7.

8.4 Specifications for used oil reprocessed for fuel oil

Used oil reprocessed for use as a fuel oil must meet the fuel specifications set by the Chief Inspector, Explosives and Dangerous Goods. These are as follows:

Element	Maximum levels
Lead	100 ppm maximum
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Halogen	1000 ppm
Water	0.5% maximum
Flash point	61^{o}C minimum

8.5 Transfer operations

During loading and unloading operations from approved used oil transporters, owners and operators of recycling, processing or disposal plants must comply with requirements as set out in Section 6.

Tracking

All sites are to keep records of incoming oil by date, volume, source and flash point. Records of oil going off site should indicate date, volume, and destination. Operators who regenerate or reprocess oil must keep disposal records for any hazardous by-products generated in the process. This includes sludges and ash, and spent fuller's earth containing oil.

Spill/contingency procedures

Each site must have, and keep up to date, the following:

- a spill contingency plan
- spill control equipment
- a fire plan
- an evacuation plan
- Hot Load Handling Management/Management of 3(a) facilities.

Record retention

Records of volumes received, processed and dispatched must be kept for a period of three years.

Appendix 1: Oil industry guideline for the construction and use of used oil collection tanks

Scope

This is the minimum standard for the construction and fixing of used oil storage tanks at small volume, industrial/commercial and public collection sites. Not all the used oil collection tanks currently in use will meet these guidelines. The guidelines are to come into force progressively as new sites are developed, as existing tanks are replaced, and/or as drainage or other major site work is undertaken at existing locations.

Aim

The aim of the guideline is to ensure that the tanks are fit for purpose and will contain used oil product on site until it is ready for collection. The tank is to comply with any other requirements imposed under the Dangerous Goods Act 1974, or by local authorities through resource consents or other provisions.

Size

Generally, the maximum container size for fibreglass or plastic igloos at public used oil collection points should not exceed 1000 litres, and only one tank will be permitted per site. New tank designs of 1000-2000 litre capacity will require consent in writing from the Chief Inspector, Explosives and Dangerous Goods.

Materials

The aim of this section is to ensure that the materials for used oil tanks are fit for purpose. All materials used in the construction of used oil tanks must be able to retain product for the life of the tank without leakage or deterioration from either the product contained or external conditions. To minimise the hazard from static electricity, the mixing of conductive and non-conductive materials shall be avoided in the construction of containers.

Plastic Tanks

Tanks of plastic materials shall be capable of withstanding exposure to ultraviolet radiation in the environment within the temperature range −18°C to +55°C. When tested for petroleum resistance in accordance with Appendix F of AS2906, the material shall:

- if exposed for up to 30 days, retain not less than 85 percent of its tensile strength and elongation; or
- if exposed for up to 60 days, retain not less than 60 percent of its tensile strength and elongation

Containers made from plastics shall contain anti-static inhibitors.

When a container is moulded of polyethylene it should be tested for stress cracking in accordance with Appendix G of AS2906, and it shall not crack. **Note:** This requirement may be waived if the manufacturer can provide evidence that the polyethylene is crack-resistant.

Metal tanks

Tanks must comply with the construction requirements of Regulation 60 of the Dangerous Goods (Class 3 – Flammable Liquids) Regulations 1985.

Glass reinforced plastic tanks

GRP tanks are to be constructed to a standard approved by the Chief Inspector of Explosives and Dangerous Goods.

Gaskets and seals

When tested in accordance with Appendix A of AS 2906, components likely to come in contact with the contents of the container shall show:

- no evidence of cracking or visible deterioration
- a change in volume not greater than 40 percent swelling or 1 percent shrinkage
- a mass loss (extraction) of not greater than 10 percent.

Design considerations

General

All openings are to be located in the top of the tank above the safe fill level. The container must be able to be sealed and padlocked to prevent the mixing of solvents with used oil.

Fill

The fill point is to be of sufficient size to allow easy draining of oil containers. A mesh is to be provided in the fill point to stop the ingress of solid particles or matter. The mesh is to be permanently fixed to prevent it from being removed and discarded.

Discharge

The discharge point must be suitable for the collection truck to pump out the used oil. The pipe on the suction discharge, if permanently fitted, should terminate as close to the bottom of the tank as practicable to enable the collection of as much sludge as is practicable. If the sludge is allowed to stay in the bottom of the tank it will become hard and reduce the workable volume of the tank, and it is not easily removed.

Venting

Provision is to be made to allow the tank to vent in the normal range of climatic conditions and to ensure that the tank is not subjected to the forces of pressure or vacuum.

Capacity

The container will have an overflow capacity, to the lowest opening, not less than 105 percent of the safe fill level.

Colour

The external surface of the finished tank may be any colour.

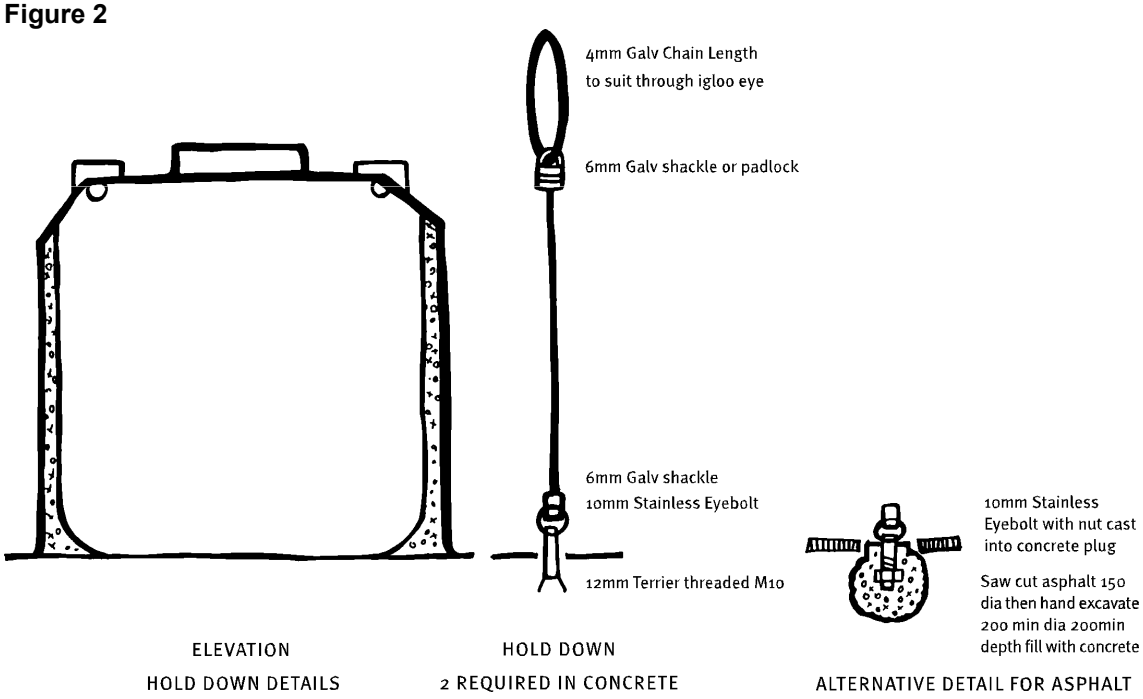
Safe fill level

The tank is to be marked, or have an indicator, showing the safe fill level.

Tank fixing

The tank is to have suitable points for fixing to the ground. These are to be clearly identified by the manufacturer. The mountings and the tank need to be able to withstand a side force equivalent to the weight of the container and a full load of used oil. The average specific gravity of lubricating oil is to be taken as 0.9. The purpose of this side force is to allow for wind and earthquake forces, not for impact resistance.

Figure 2



Security

All openings for the tank need to be able to be locked. Tanks are to be kept locked at all times, unless loading and unloading.

Siting and bunding of used oil tanks

Tanks are to be sited to minimise the possibility of leakage through malicious or accidental damage. The tank's location must be where there is some degree of supervision by the site operator, who has responsibility for what is emptied into the container. The tanks should be sited so that oil can be safely loaded and unloaded from the tank.

Tanks must always be mounted on an impermeable surface such as concrete or asphalt. They must not be placed on soil. If the tanks are located near vehicular traffic they should be protected by suitable bollards. Tankers must be able to manoeuvre safely around the site, and potential hazards, such as recycling and rubbish bins, should not be placed within 2 metres of a used oil tank sited outdoors.

Used oil storage tanks should be located outdoors wherever possible.

On outdoor sites with drainage interceptors, tanks must be located within the interceptor's catchment area. Bunding should be provided for at least 20 percent of the tank's capacity, unless it can be shown that spillage can be contained by some other means. On sites not equipped with interceptors, the tank should be located at least 8 metres from any stormwater, sump or other drain. Bunding for 50 percent of the tank's capacity must be provided on sites not equipped with interceptors.

Tanks may be located inside only at controlled sites. Indoor tanks are to be bunded or sited so that any spillage can be contained away from storm or wastewater drains. Indoor tanks should also be located so that a used oil truck can park within five metres.

Interceptors

Interceptors that are required to contain oil from used oil tanks are to be built to the standards specified in *Environmental Guidelines for Water Discharges from Petroleum Industry Sites in New Zealand* (MfE, 1998).

Marking/labelling

Each container shall be permanently marked, in a clear and legible manner, with the following:

- the manufacturer's name or registered trademark
- the safe fill level, in litres, in conjunction with a mark indicating that level
- an indication of the year of manufacture of the container and, for plastic containers, also the month of manufacture.

General collection sites

Tanks at general collection sites are to be labelled with a Class 3 Dangerous Goods diamond.

Tanks at all sites

All tanks used for the collection of used oil should have the following labels attached.

USED LUBRICATING OIL

Contain Spillage

(76 pt black print yellow highlight)

LUBRICATING OIL

TRANSMISSION AND HYDRAULIC FLUIDS ONLY

(46 pt green highlight)

PROHIBITED SUBSTANCES

(Black 76 pt yellow highlight)

PETROL, DIESEL, COOLANTS, PAINT

SOLVENTS, PARTS WASHING FLUIDS

and KEROSENE are forbidden

(Black 46 pt, red highlight)

Appendix 2: Testing and certification of used oil bulk loads

Each load delivered to a used oil transfer/ tank farm facilities is to be sampled.

A sample of at least one litre is to be taken from the top of the load in the tank wagon. If it is a multi compartment wagon, a sample of at least one litre is to be taken from each compartment.

A batch number is given to that sample to correspond with the run number from which that oil was collected.

Testing

The oil is to be tested for flash point by the closed cup method.

If loads are found to have a flash point below 60.5^{o}C, the companies from which the load was collected must be advised. If a second run of the same sites also returns a low flash point result, individual collection sites are to be sampled on the third run, to isolate the particular site involved. The site and the local Dangerous Goods Inspector are to be informed.

Results are to be kept in a register for three years.

Appendix 3: Spill prevention, response and clean-up procedures for transporters

Vehicle spill kit: suggested contents list

(This may be varied to suit local conditions if required).

Contents	Quantity
Hydrocarbon absorbent pads	10
Bag of particulate (Oil Dry or similar)	1
Absorbent socks	1 x 1.5 m 1 x 3 m
Hydrocarbon pillows	2
PVC drain cover	1
Folding trenching tool	1
Pair PVC gauntlets	1
A pot of Vetta Paste, Plug 'N' Dike, Pig Repair putty, or similar	1
Polythene disposal bags	2
Contents list	1

Spill prevention

Key precautions are as follows:

Do	To prevent
Park away from traffic flows, and/or use safety cones if necessary	Tank wagon being hit by other traffic
Dip tank wagon and site tank before collection	Tank wagon overflow
Regular inspection of hoses, pumps and other equipment	Equipment failure

When spills do occur

Any spillage or similar escape, or contamination of other products by the used oil shall, where possible, be rectified before the collector leaves the site.

- Isolate the source of spillage and close vehicle valves.
- Contain and control the spill.
- Stop all operations in the immediate areas of concern and remove or shut down any ignition sources.
- Close the interceptor valve if there is one on site, and close and/or block any drains leading off the site.
- Report spillage to site operator.
- Start the clean up. Request assistance if necessary.
- Ensure that any materials used in the clean up are disposed of appropriately.

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- If the spillage occurs on unsealed ground, the soil must be removed and disposed of appropriately.
- If there is a risk of oil entering a sewer, stormwater drain or natural waterway, the relevant local authority should be notified immediately.

Notice of any such incident shall be given to the appropriate agency as soon as possible by way of a report detailing the cause and severity of the incident and the remedial measures taken.

About the Ministry for the Environment
Manatū Mō Te Taiao

Making a difference through environmental leadership.

The Ministry for the Environment Manatū Mō Te Taiao advises the Government on policies, laws, regulations, and other means of improving environmental management in New Zealand. The significant areas of policy for which the Ministry is responsible are: management of natural resources; sustainable land management; air and water quality; management of hazardous substances, waste and contaminated sites; protection of the ozone layer; and responding to the threat of climate change. Advice is also provided on the environmental implications of other Government policies.

The Ministry monitors the state of the New Zealand environment and the operation of environmental legislation so that it can advise the Government on action necessary to protect the environment or improve environmental management.

The Ministry carries out many of the statutory functions of the Minister for the Environment under the Resource Management Act 1991. It also monitors the work of the Environmental Risk Management Authority on behalf of the Minister.

Besides the Environment Act 1986 under which it was set up, the Ministry is responsible for administering the Soil Conservation and Rivers Control Act 1941, the Resource Management Act 1991, the Ozone Layer Protection Act 1996 and the Hazardous Substances and New Organisms Act 1996.

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