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Review

Environmental liability and life-cycle management of used lubricating oils☆

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ABSTRACT

Used oil handling, as a business, requires an extensive understanding by management that environmental liabilities exist through its supply chain. Findings from a review of the legal requirements of operating a used oil handling business were: understanding the transfer of ownership of used petroleum hydrocarbons is critical to any such business and how this is documented; used oil handlers are responsible for providing training to their staff, including site personnel and any third party waste contractors, and for communicating best practice procedures relating to the management of used petroleum hydrocarbons to all those individuals and organisations involved in business relationships that the used oil handling companies have; used oil handlers should audit the performance of any third party contractors that it engages to conduct work on behalf of its customers. Hypothetical situations of a company planning to enter the used oil handling market are described in relation to petroleum hydrocarbon wastes it handles to illustrate the range of potential liabilities. Companies proposing to establish a used oil handling business should ensure that they provide accurate advice to its employees, its customer's employees and to its third party contractors, all of which may be responsible for handling used petroleum hydrocarbons as part of the service it intends to provide, and that it has a well documented system addressing how environmental issues are managed.

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1. Introduction

Used oil handling can impact a wide range of stakeholders as well as the environment. This is especially important in terms of corporate responsibility, in particular, not only how the companies that produce or handle used oil, are perceived by other industries, communities, and investors, but also in terms of the director's fiduciary duties for governing those companies. Furthermore, used oil stewardship is increasingly becoming important from a cost perspective with crude oil approaching $US 100 per barrel in 2008. In Australia approximately 500 ML of used oil is collected annually.

Used petroleum hydrocarbons are an environmental and a human health hazard if not disposed off correctly. If put into stormwater drains or sewers, they can affect waterways and coastal waters [1,2]. When dumped in soil or sent to landfill, they can migrate into ground and surface waters though numerous landfarming (land treatment) processes for used oil management have demonstrated that controlled placement, proper management and monitoring can limit pollution [3–6]. Used petroleum hydrocarbons are a threat to plant and animal life, which can further result in economic losses, for example, recreation and fishing industries. As a particular case, used oil from internal combustion engines generally accumulates a variety of contaminants, which increase the oil's toxicity [7–12]. Furthermore, from a regulatory perspective, there are large fines for individuals and companies whose activities result in environmental pollution from used petroleum hydrocarbons. The life-cycle of lubricants in industry supply chains, and how they are managed, is increasingly being recognised as an essential element of good environmental management by both suppliers and their customers [13–15].

It is therefore important that used oil generators, handlers, transporters and reprocessors understand the issues of liability and used oil, and manage their activities to minimise their liability and at the same time protect the environment. The life-cycle of lubricants is shown in Fig. 1.

1.1. Objective

The objective in this study has been to address the following question: What are the applicable legal and governance issues that companies should be aware of that will impact the successful establishment of a used petroleum hydrocarbon management business in Australia? This review will therefore set an important context for used oil businesses (and other companies considering entering into the used oil handling market) so that they can appreciate the extent of legislation in this area of environmental management in Australia and beware of potential environmental issues that could impact the success of their businesses.

1.2. Scope of study

1.2.1. Petroleum hydrocarbon wastes types considered

The used petroleum hydrocarbon streams considered as part of the scope of this study were classified as either liquids or solids/semi-solids. All the wastes referred to contained used oil.

1.2.2. Scope of legal review

A limited scope legal review was undertaken. Much of the discussion refers to a company considering establishing a used oil handling business and it is directed specifically at lubricant suppliers who are already. These were the broader legal issues rather than specific laws and regulations pertaining to particular jurisdictions. The review pertains to the following activities in setting up and operating a used petroleum hydrocarbon management business in Australia:

- re-use, waste minimisation and recycling,
- storage and handling,
- transportation,
- treatment and disposal,
- recycled product standards/issues, and
- transfer of ownership of waste.

A discussion of the Australian federal government's Oil Stewardship Scheme was excluded from the review to enable a thorough discussion of the contractual issues and state regulations in relation to used oil handling.

1.3. Methodology

Information was sourced from legal databases, consultants, and practicing legal professionals. The following databases were used in the study: LexisNexis, Lawlex, AusLit and various academic databases [16]. Federal and state legislation was examined as part of this review. The role of local government was not identified on a specific, but rather on a general basis, highlighting trends only at the local government level. Meetings with environmental regulators were also conducted. A listing of the principal pieces of environmental legislation and policies, for selected states in Australia, which are applicable to the regulation of used petroleum hydrocarbons, is given in Tables 1–3. The relevant provisions of these pieces of legislation were not considered in detail as part of this review. Commonwealth environmental legislation (Table 4) was also considered concurrently with the principal environmental legislation for particular state jurisdictions in which the used petroleum hydrocarbon business was to be conducted.

The Section 2.2 in the review have been discussed as a series of questions and answers relating to environmental liability through

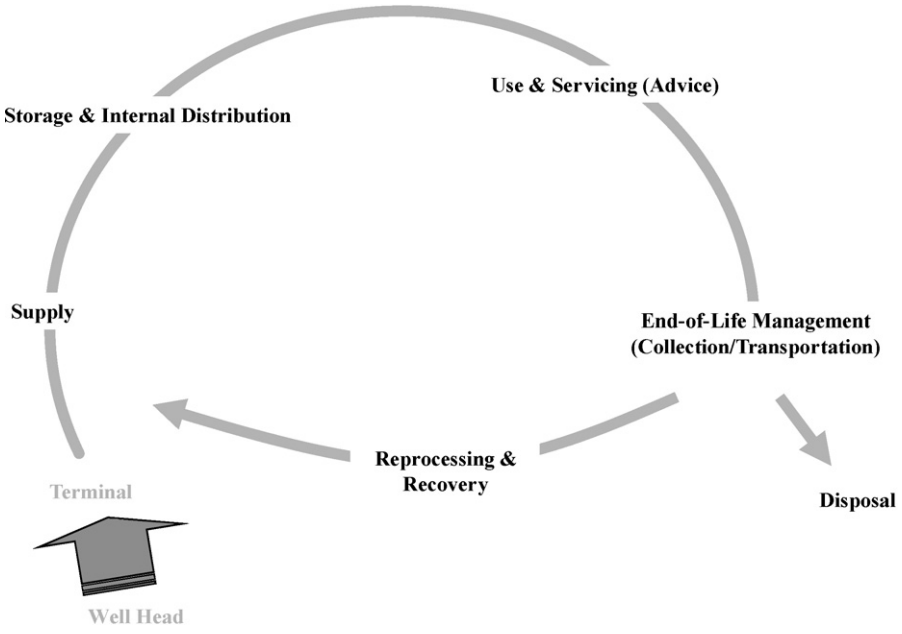

Fig. 1. Lubricant life-cycle.

the lubricant life-cycle. The questions posed reflect the practical scenarios a used oil handling company may face in the day-to-day operations of their business. Professional legal services were obtained to review the legal arguments put forward in this section of the study.

The review considered environmental legislative requirements in relation to the following used petroleum hydrocarbon activities:

- advice,
- supply and installation,
- collection,
- transportation,
- storage and handling, and
- reprocessing and recovery.

2. Findings

This review outlines the statutory environmental requirements relating to the broad activities of advice, supply and installation, collection, transportation, storage and handling, reprocessing and recovery, under the following headings:

- proposed used petroleum hydrocarbon activities,
- significant environmental legal issues, and
- other environmental legal issues.

2.1. Proposed used petroleum hydrocarbon activities

The management of environmental protection in Australia is shared across jurisdictions, that is, across State, Territory and Local Governments. The state and territory governments have primary responsibility for the environmental regulation of used petroleum hydrocarbon generation, collection, transport, storage, handling, reprocessing and recovery. Both solid and liquid used petroleum hydrocarbons are "controlled" or "regulated" wastes in several jurisdictions, and cannot be disposed of to sewer as a liquid waste, or in an uncontrolled manner to landfill. In some jurisdictions, used petroleum hydrocarbons are not specifically controlled or regulated, although inappropriate disposal is often addressed by environmental laws regulating activities with the potential to cause "environmental harm".

The general outline and assumptions have been divided into the following subsections:

- advice,
- supply and installation,
- collection,
- transportation,
- storage and handling,
- reprocessing and recovery, and
- disposal.

2.1.1. Advice

Used oil handlers provide technical advice to customers in relation to their waste management practices for fuels, oils, grease and other petroleum hydrocarbon contaminated material.

2.1.2. Supply and installation

For some companies planning to enter into the used oil management market in Australia, their current core activity may be the supply of fuel, oil and grease to customers for use in the customer's plant and equipment. Such companies may also supply and install systems for a customer to enable tracking of petroleum hydrocarbon use (that the company supplies) and its recovery.

2.1.3. Collection

The role of collectors is to pick up used petroleum hydrocarbons from generators and to transport the material to reprocessors and recyclers, or to other sites for temporary storage prior to recycling, reprocessing or disposal.

2.1.4. Transportation

The role of transporters is to safely move used petroleum hydrocarbons from the point of collection to either a storage and handling facility or a reprocessing and recycling facility or a disposal facility. Primary used oil handlers may use their own vehicles to transport the used petroleum hydrocarbons or may arrange, on behalf of the customer, for a licensed waste contractor to transport the used petroleum hydrocarbons.

Table 1
Regulations applicable to handling used oil in New South Wales

Environmental protection and approvals	Protection of the Environment Operations Act 1997 Protection of the Environment Operations (General) Regulation 1998 Protection of the Environment Operations (Waste) Regulation 1996 Protection of the Environment Operations (Control of Burning) Regulation 2000 Clean Air (Plant and Equipment) Regulation 1997 NEPM (National Environmental Protection Measure) for the National Pollutant Inventory 1998 Waste Minimisation and Management Act 1995 Waste Avoidance and Resource Recovery Act 2001 Waste Recycling and Processing Corporation Act 2001 Contaminated Land Management Act 1997 Unhealthy Building Land Act 1990 Environmentally Hazardous Chemicals Act 1985 Environmental Planning and Assessment Act 1979 Environmental Planning and Assessment Regulation 2000
Dangerous goods	Dangerous Goods Act 1975 Dangerous Goods (General) Regulation 1999 AS 1940:2004 The Storage and Handling of Flammable and Combustible Liquids Road and Rail Transport (Dangerous Goods) Act 1997 Road and Rail Transport (Dangerous Goods) (Road) Regulation 1998 Road and Rail Transport (Dangerous Goods) (Rail) Regulation 1999 Australian Code for the Transport of Dangerous Goods by Road and Rail (6th edition) Fire Brigades Act 1989 NEPM Movement of Controlled Wastes between States and Territories 1998
Trade waste	Sydney Water Act 1994 Sydney Water Trade Waste Policy and Management Plan Hunter Water Act 1991 Hunter Water Corporation Trade Waste Policy and Management Plan
Public and environmental health	Local Government Act 1993 Public Health Act 1991

2.1.5. Storage and handling

The storage of flammable solids and liquids (such as used oils and other used petroleum hydrocarbons) are activities which potentially involve the storage and handling of Class 3 and Class 4 dangerous goods.

2.1.6. Reprocessing and recovery

Recovery and reprocessing activity can be undertaken by a used oil handler themselves or a third party and not by a primary fuel or lubricant supplier to convert the used petroleum hydrocarbons into a useable product. However, it is necessary to determine whether the primary fuel or lubricant supplier will retain any liability for any emissions and/or pollution incidents that may occur during the recycling and reprocessing of used petroleum hydrocarbon material which was originally supplied to the customer by this supplier, or which was managed by this supplier.

2.1.7. Disposal

Not all used petroleum hydrocarbon material can be recycled and reprocessed, and must be disposed of in a lawful and environmentally appropriate manner. A fuel and lubricant supplier may be involved in arranging, on behalf of a customer, for the disposal of the used petroleum hydrocarbon material by a licensed contractor.

2.2. Significant environmental legal issues

2.2.1. Overview of legislation

There are numerous acts and regulations in Australia governing used oil generation and reprocessing. In NSW, there are more than 25 separate pieces of legislation that regulate used oil. Three out of Australia's 8 states and territories, NSW, Victoria and Queensland, have their own regulations in relation to used oil and environmental protection and these are listed in Tables 1–3 as an example. The other states and territories have a similar range of regulations. Table 4 lists the relevant commonwealth (or federal) legislation. Across the Australian jurisdictions, the majority of regulations are for environmental protection and approvals, dangerous goods handling and trade wastes, and public and environmental health (Tables 1–4). All the legislation impact on the handling, use, collecting, and supply of used oil. In summary, a high level of regulation exists which impacts the used oil handling industry. These were all considered in the development of the remainder of this section of the paper.

Table 2
Regulations applicable to handling used oil in Victoria

Environmental protection and approvals	Environment Protection Act 1970 Environment Protection (Scheduled Premises and Exemptions) Regulations 1996 Environment Protection (Prescribed Waste) Regulations 1998 Industrial Waste Management Policy (Waste Minimisation) Industrial Waste Management Policy (National Pollutant Inventory) SEPP (Control of Noise from Commerce Industry and Trade) SEPP (Groundwaters of Victoria) SEPP (Waters of Victoria) SEPP (The Air Environment) Planning and Environment Act 1987 NEPM (National Environmental Protection Measure) for the National Pollutant Inventory 1998 Planning and Environment Regulations 1988
Dangerous goods	Dangerous Goods Act 1985 Dangerous Goods (Storage and Handling) Regulations 2000 AS 1940:2004 The Storage and Handling of Flammable and Combustible Liquids Road Transport Dangerous Goods Act 1995 Road Transport Reform (Dangerous Goods) Act 1995 (Cth) Road Transport Reform (Dangerous Goods) Regulations 1997 (Cth) Dangerous Goods (Transport by Rail) Regulations 1998 Australian Code for the Transport of Dangerous Goods by Road and Rail (6th edition) NEPM Movement of Controlled Wastes between States and Territories 1998
Trade waste	Water Industry Act 1994 Water Industry Regulations 1995
Public and environmental health	Local Government Act 1989 Health Act 1958

Table 3
Regulations applicable to handling used oil in Queensland

Environmental protection and approvals	Environmental Protection Act 1994
	Environmental Protection Regulation 1998
	Environmental Protection (Interim Waste) Regulation 1996
	Environmental Protection (Waste Management) Regulation 2000
	Environmental Protection (Waste Management) Policy 2000
	Environmental Protection (Air) Policy 1997
	Environmental Protection (Water) Policy 1997
	Environmental Protection (Noise) Policy 1997
	Petroleum Act 1923
	Petroleum Regulation 1966
	Integrated Planning Act 1997
	Integrated Planning Regulation 1998
	NEPM (National Environmental Protection Measure) for the National Pollutant Inventory 1998
Dangerous goods	Building (Flammable and Combustible Liquids) Regulation 1994
	Fire and Rescue Authority Act 1990
	AS 1940:2004 The Storage and Handling of Flammable and Combustible Liquids
	Workplace Health and Safety Act 1995
	Workplace Health and Safety (Miscellaneous) Regulation 1995
	Transport Operations (Road Use Management) Act 1995
	Transport Operations (Road Use Management—Dangerous Goods) Regulations 1998
	Australian Code for the Transport of Dangerous Goods by Road and Rail (6th edition)
	Liquid Fuel Supply Act 1984
	NEPM Movement of Controlled Wastes between States and Territories 1998
Trade waste	Sewerage and Water Supply Act 1949
	Standard Sewerage Law
Public and environmental health	Local Government Act 1993
	Health Act 1937
	Health Regulation 1996

2.2.2. Advice

A used oil handler is managing waste for a customer such as a mining company. The customer's employees are doing the actual work and the used oil handler (referred to as Company X) is advising the customer as to the procedure to be implemented. During the work a spill occurs. Who is legally responsible?

Company X's liability in this scenario will depend upon whether Company X was negligent in the provision of the advice. In other words, if the spill occurred as a result of the customer's employee or employees following the procedure advised by Company X, and Company X had provided inaccurate or inappropriate advice, then Company X could be liable in negligence. However, if the procedure advised by Company X was correct and appropriate in the circumstances, and the spill occurred as a result of a failure on the part of the employee to follow the procedure, then liability would rest with the customer. Company X must ensure that its personnel who are providing advice and designing procedures or systems for customers are appropriately qualified to provide the relevant advice. Company X must also ensure that the advice is effectively communicated to the customer and the employees of the customer who will be undertaking the relevant work. Company X may be providing training to a customer's personnel on used petroleum hydrocarbon management practices. In some cases, this may involve the formation of a petroleum hydrocarbon management team, comprised of the customer's employees, who would undertake used petroleum hydrocarbon activities. It is important that Company X retains written documentation of any training provided, perhaps coupled with written confirmation from attendees of the training courses, that they have understood the content of the training. This will protect Company X in the event of a pollution incident, from any claims that the training was deficient or not properly communicated.

2.2.3. Supply and installation

A petroleum hydrocarbon supplier (referred to as Company X) is supplying oil, grease and fuel to a customer. Is Company X legally responsible for any pollution incident involving the petroleum hydrocarbons it supplies?

In some jurisdictions, including New South Wales, the range of parties who can be responsible in the event of a leak, spill or escape is very broad and can include the owner of the substance which leaks, spills or escapes. In the scenario outlined above, this could include Company X as the owner of the petroleum hydrocarbons supplied to the customer, if the spill or escape occurred prior to the customer taking delivery and thereby assuming ownership or the material. It is often extremely difficult to determine legal ownership, and hence, legal liability, in relation to substances which are subject to a progressive chain of custody. Whilst it is possible to contractually allocate ownership, some legal obligations cannot be contractually transferred and will be retained by the party attempting to pass on ownership, unless that party can demonstrate that it has exercised "due diligence".

Company X designs and installs a system for removing used oil from machines. During the removal of the used oil from the machine by the customer's employees, a spill or leak occurs. Who is legally responsible?

If it could be established that the development or installation of the system was performed negligently, and the leak or spill occurred as a result of the negligent design or installation, then Company X could be held liable for any damage, injury or loss suffered as a result. However, if the leak or spill resulted from negligence on the part of the customer in removing the oil, then Company X is unlikely to be held liable. Company X should ensure that appropriate training and instruction in relation to the operation of the system is provided to the customer, so as to avoid the likelihood of a spill or escape occurring. It is also important that the contract of supply or installation between Company X and the cus-

Table 4
Commonwealth legislation applicable to handling used oil

Environmental protection and approvals	Environment Protection and Biodiversity Conservation Act 1999
	Environment Protection and Biodiversity Conservation Regulations 2000
	Diesel and Alternative Fuels Grants Scheme Act 1999
	Industrial Research and Development Incentives Act 1976
	Product Stewardship (Oil) Act 2000
	Product Stewardship (Oil) Regulations 2000
	Excise Tariff Amendment (Product Stewardship for Used oil) Act 2000
Dangerous goods	Road Transport Reform (Dangerous Goods) Act 1995
	Road Transport Reform (Dangerous Goods) Regulations 1997
	Hazardous Waste (Regulation of Exports) Act 1989
	Hazardous Waste (Regulation of Exports and Imports) (Fees) Regulations 1990

tomer contains an indemnity and release by the customer to ensure that it will not hold Company X liable for any incidents occurring as a result of the negligent operation of the system by the customer.

2.2.4. Collection

Company X is managing waste for a customer. Company X's employees are collecting the used oil from the customer's plant and equipment. During the collection process, a spill or leak occurs. Who is legally responsible?

If a pollution incident such as a spill, leak or escape of used petroleum hydrocarbons occurs during the collection process, allocation of liability between Company X and the customer may be difficult to ascertain. Under legislation in all States and Territories, penalties apply for willfully or negligently causing or permitting any substance to leak, spill or escape in a manner that harms or is likely to harm the environment. The party liable for the pollution incident would generally be the person responsible for causing the incident. However, in a number of States, including New South Wales, the category of persons who may be found liable in these circumstances, also includes the owner of the substance, the owner of the container from which the substance spilt or escaped, and the owner of the premises upon which the leak or spill occurred. This would mean that, if a leak, spill or escape occurred on a particular customer's premises, and it occurred as a result of negligence by Company X, then both Company X and the customer could be found liable—Company X as the party who caused the incident, and the customer as the owner of the substance, the container in which the substance was stored and the premises on which the incident occurred. Given the broad net of potentially liable parties, it is essential that Company X, as the collector, is in a position to establish a defence if an incident occurred on a customer's site. In most States and Territories, the only defence available is that of "due diligence". This would require Company X to establish that it had taken all reasonable precautions and exercised all due care to limit the possibility of an incident occurring during collection.

Can a used oil handler (referred to as Company X) determine or modify the allocation of liability by entering into appropriate contractual arrangements?

The contractual arrangements between Company X and a customer will be important in determining the appropriate allocation of liability for incidents occurring during the collection process. Whilst legislative obligations cannot be contracted out of, existing contractual arrangements may influence the outcome and/or penalties imposed in the event that proceedings are instituted for a pollution incident. The contract will also be important to determine responsibility for any third party injuries or property damage caused by a pollution incident.

A certified used oil contractor is buying used oil from the customer. The contractor is using their own truck and hoses to transfer used oil from the storage tank to the truck. During the transfer of the used oil a spill occurs. Who is legally responsible?

In this scenario, if the contractor has been engaged directly by the customer, then it is possible that the customer may be vicariously liable for the contractor's actions unless the customer can demonstrate that it has adequately instructed and supervised the contractor in relation to the collection of the used oil. This would require, for example, evidence that the contractor was aware of the nature of the substance being collected, and that the customer had satisfied itself, as far as reasonably practicable, that the collector was licensed and qualified to undertake the collection activity. If the contractor is engaged by Company X on the customer's behalf, then the same obligations will be incumbent upon Company X.

Each State and Territory in Australia has legislation which can render a principal vicariously liable for the actions of its contractors. In other words, Company X may be liable for the actions of its contractors in the same way as it would be liable for its employee's actions. In these circumstances, it is essential for Company X to ensure that contractors are adequately trained and/or supervised in the appropriate collection procedures. It will only be in circumstances where the contractor is acting wholly outside the range of duties which could be expected to form part of the contract, that Company X, as principal, would be absolved from any vicarious liability. Even if the contractor acts in an unexpected fashion, if the action occurred in the course of collection activities, Company X would generally remain liable. The only defence which would be available to Company X in these circumstances would be for Company X to demonstrate that it had taken all reasonable precautions to ensure that the contractor acted in an appropriate manner. This would require evidence that appropriate training and communication of safe work practices had been provided. It is necessary to ensure that an appropriate contract is drafted between Company X and any independent contractors used for collection activities.

If Company X is collecting used petroleum hydrocarbons from a customer's site, how can Company X ensure that the substances it is collecting are in fact the used petroleum hydrocarbons of the type contracted for?

An issue which may give rise to some practical difficulties is the extent to which Company X, as collector in this scenario, is able to confirm that the material being collected at a particular customer's site is in fact the material which Company X believes it is receiving. If material is not in accordance with the expected composition, this may give rise to a number of potential risks, including a pollution incident caused by inappropriate mixing of materials in Company X's vehicle. It will not be practicable to test each container before it is collected. To ensure that Company X's liability is minimised, the collection contract should clearly require the customer to disclose the nature of the materials which will be collected during the course of the contract, and to warrant that the material will always correspond with this description. In circumstances where there is a possibility of variations, there should be an obligation on the customer to disclose these variations as and when they occur.

Even in circumstances where the contract expressly places the obligation to disclose the nature of the material to be collected on the customer, there will also be an obligation on the collector to ensure that, in circumstances where there is reason to believe or suspect that the material being collected is not in accordance with contractual expectations, the collector makes appropriate enquiries to determine the identity of the material. This will require Company X to ensure that personnel undertaking collection activities are sufficiently trained and/or supervised so as to be in a position to make the appropriate enquiries. This obligation will extend to independent contractors who may be engaged by Company X on the customer's behalf, to undertake collection activities.

In some States, the obligation to ensure that there is no mixing of wastes rests with the driver of the vehicle into which the waste is conveyed. For example, in Western Australia, an offence is committed by a driver who fails to ensure that more than one category of liquid waste is placed in any tank used by the driver, unless the driver is expressly permitted to mix the relevant wastes.

2.2.5. Transportation

A petroleum hydrocarbon supplier (referred to as Company X) is managing waste for a customer. A certified waste contractor is buying used oil from the customer. The contractor is using their truck and is transporting the used oil to their reprocessing facility. During the journey the truck overturns and spills the used oil. Who is legally responsible?

If there is a spill, leak or other pollution incident in transit, liability will generally be allocated in accordance with principles of negligence. For example, if the spill or leak arises as a result of the driver's negligence in failing to ensure that the goods were properly secured or failing to properly maintain the vehicle used to transport the used petroleum hydrocarbons, then liability will be retained by the driver and the company which employs the driver. If the third party contractor was engaged by Company X as part of Company X's waste management activities undertaken on behalf of the customer then, provided the contractors were acting within the scope of their contracted duties, any incident which occurs in the course of the transportation of the used petroleum hydrocarbons, may be the responsibility of Company X, in accordance with principles of vicarious liability. The only defence which would be available to Company X in these circumstances would be the defence of due diligence. This would require Company X to be able to demonstrate that the contractor was appropriately trained and instructed in the safe working practices associated with the transportation of the used petroleum hydrocarbons. In circumstances where Company X will be engaging the contractor on behalf of the customer, it would be advisable for Company X to obtain written confirmation from the contractor, confirming that the driver understands their obligations and is familiar with the relevant legislation applying to them, including the obligations contained in the transportation of dangerous goods by road and rail legislation. If a spill or leak occurs in transit as a result of a failure to properly label, identify or pack the used petroleum hydrocarbons in the relevant container, then liability will either rest with the customer, if the customer was responsible for the labelling identification and packaging of the goods, or with Company X, if Company X has undertaken the labelling, identification and packaging on behalf of the customer.

If a used oil handler (referred to as Company X) is transporting the used petroleum hydrocarbons, are there any statutory obligations upon it to track the waste?

There are different requirements depending on whether the material is transported outside or inside of the state.

Intrastate Waste Tracking. In most States and Territories, legislative schemes have been established to ensure that the movement of certain types of waste is tracked. Nevertheless, tracking requirements may be imposed as licence conditions in these jurisdictions. The types of waste which are required to be tracked are generally categories of "hazardous" and "industrial" wastes, including used petroleum hydrocarbons. The assessment and classification of the waste is usually the obligation of the generator (referred to as the "consignor"), who must complete a waste data form, identifying and describing the waste to be consigned. Copies of the waste data form must be signed by the consignor before the waste is dispatched, and copies of the form must be retained by the consignor and the transporter. As noted above, the waste consignor is responsible for completing the form and Company X, as the transporter, must check that the form is completed, sign it and ensure that the waste data form is carried in the waste transportation vehicle. Waste tracking obligations apply whether or not the transportation activity or the waste facility to which the waste is being transported, is required to be licensed.

Interstate Waste Tracking. In June 1998, the National Environment Protection Council developed a National Environment Protection Measure (NEPM) relating to the movement of "controlled waste" between States and Territories. Used petroleum hydrocarbons fall within the definition of "controlled waste" and hence fall within the scope of the NEPM. The NEPM provides a national system for tracking the movement of controlled waste across state and territory borders. However, the NEPM is only enforceable in states where state legislation has been enacted to give force to the NEPM.

2.2.6. Storage and handling

A petroleum hydrocarbon supplier (referred to as Company X) owns an off-site location (e.g. a former fuel depot) and Company X uses this location as a place for temporary storage of petroleum hydrocarbon wastes to make it more feasible for a third party waste contractor to collect and dispose of these wastes. What obligations would Company X be subject to in this scenario?

There are a number of obligations which will be incumbent upon Company X in relation to any used petroleum hydrocarbon materials stored on site at any of Company X's facilities. These storage obligations will vary depending upon whether the material is classified as a "dangerous good" or as general "waste".

2.2.6.1. Dangerous goods. The storage of used petroleum hydrocarbons generally requires a licence under dangerous goods legislation, unless only minor quantities are stored. Generally speaking, occupiers of premises where dangerous goods are stored must ensure that any risk associated with the storage and handling of those goods at the premises is eliminated or, if it is not practicable to eliminate the risk, then the risk must be reduced insofar as it is practicable to do so. Occupiers of premises where dangerous goods are stored and handled must also generally ensure that the goods and any structural plant associated with the storage and handling of the goods, are protected against damage from impact of vehicles and mobile plant. In relation to the transfer of dangerous goods into a container used for the storage of dangerous goods in bulk, it will generally be the duty of the occupier (i.e. Company X in the scenario outlined above) to ensure that engineering controls are used to manage the risk associated with the overfilling of containers holding dangerous goods.

There are also a number of obligations contained in the legislation of all States and Territories to ensure that dangerous goods are properly labelled. Storers of dangerous goods must also ensure that dangerous goods are not mixed or stored in close proximity to other dangerous goods, in circumstances which could give rise to chemical reactions or other potentially harmful incidents.

There are a number of safety standards and guidelines issued by the various Australian safety authorities dealing with the handling of different categories of dangerous goods.

2.2.6.2. Waste. If the material being stored is not classified as dangerous goods, most States and Territories nevertheless impose licensing obligations on the storage of large quantities of "waste". For example, under New South Wales legislation, premises will be required to obtain a licence from the Environment Protection Authority if they fall within the definition of a "waste facility". This is defined as any premises used for the storage, treatment, reprocessing, sorting or disposal of waste, including premises used to store more than 30,000 tonnes of waste per year.

Most other States and Territories require a licence for waste facilities with varying threshold levels triggering the licensing obligation. It should be noted that the fact that the waste is to be recycled does not generally exempt the operator from obtaining a licence. It should be noted that, in all States and Territories, offences are created for breaching the terms and conditions of a dangerous goods licence or failing to hold a licence where one is required. Similar offences are created for carrying out a waste activity, such as the operation of a waste facility, without the appropriate licence or in breach of the terms or conditions of any such licence.

A petroleum hydrocarbon supplier or used oil handler (referred to as Company X) is storing used hydrocarbons on one of its

facilities. A spill or leak occurs from the storage container. Who is legally responsible?

Unless the contract provides for the customer to retain ownership of the used petroleum hydrocarbon material until such time as it is reprocessed or recovered, any spills or escapes which occur during the storage phase are likely to be the responsibility of Company X. However, the contract between Company X and the customer should contain an indemnity in respect of any used petroleum hydrocarbons which were improperly stored, identified or labelled by the customer. If the used petroleum hydrocarbons are stored at a Company X owned site in the containers in which they were placed prior to collection by Company X, and a leak, spill or other pollution incident occurs as a result of the improper labelling, identification or packaging by the customer, then the indemnity would be available to protect Company X from liability or to enable it to claim from the customer, any losses or damage suffered.

2.2.7. Reprocessing and recovery

A petroleum supplier (referred to as Company X) undertakes the total used petroleum hydrocarbon management for a customer. As part of this role, Company X arranges for a used oil handler to collect the material from the customer's site or from Company X's temporary storage facility. The used oil handler is required to hold a licence for the relevant recycling activity and fails to obtain such a licence or, if he or she has obtained such a licence, breaches its conditions by exceeding the emission limits contained in the licence. Who is legally responsible?

The recycler, as the party undertaking the recycling activities, is primarily liable to obtain a licence if required, or to comply with the conditions of the licence. Any breach of the licence will be the responsibility of the recycler. However, in addition to prosecution and liability for licence breaches and associated offences, there is also potential for prosecution for general air and water pollution offences under environmental legislation in all States and Territories. In some jurisdictions, the offence can be committed not only by the person undertaking the activity (i.e. the used oil handler), but also the owner of the substance involved. It would therefore be important to determine ownership of the used petroleum hydrocarbon material. Assuming the contract between the used oil handler and the customer and/or Company X was silent on this point, or that there was no contract, the general legal position would be that ownership would rest with the used oil handler once they implemented procedures to reprocess or recycle the material for commercial purposes. However, if a spill or escape occurred on the used oil handler's site prior to commencement of recycling or reprocessing, it would be arguable that ownership was still retained by the customer. It is therefore crucial to ensure that a contract is in place which expressly states that, in circumstances where the used oil handler collects the material from the customer's premises, ownership passes immediately upon collection. In circumstances where the material is being delivered to the used oil handler by Company X or a third party, ownership should pass to the recycler immediately upon delivery at the used oil handler's facility.

2.2.8. Disposal

A petroleum hydrocarbon supplier (referred to as Company X) supplies technical advice to the customer, collects the used oil, manages the used oil consolidation process and arranges for a licensed contractor to dispose of the used oil and related wastes. The contractor dumps the used oil and related wastes on the side of the road. Who is legally responsible?

Liability for the unlawful dumping of waste generally rests with the person carrying out the dumping activity. It may also be the owner of the used oil or the person who caused or permitted the used oil to be disposed of. In other words, liability could extend to the customer and Company X, if Company X was responsible for arranging the transportation and disposal of the used oil. In these circumstances, the only way in which the customer and Company X could ensure that they were not liable for the illegal dumping, would be if they could establish that they had exercised "due diligence". This would require evidence that they had ensured that the contractor was appropriately qualified and licensed to transport the material. Enquiries should also be made as to where the waste is to be disposed, to ensure that the relevant location was appropriately licensed for that disposal. Waste tracking legislation which is now in place in most States and Territories will generally ensure that this information is provided.

2.3. Other environmental legal issues

2.3.1. Extent of compliance with legislation

As part of the current review of liability issues and used oil handling in Australia, a brief assessment was made of the extent of compliance of the used oil management industry to existing Australian federal, state and local government legislation. The extent of non-compliance to the relevant legislation regulating used oil management activities are relatively low in Australia even with the wide ranging laws and regulations. In the 10-year period leading up to January 2008, 8 cases related to the mis-handling of used oil were brought to the courts in Australia [16]. A summary of these cases are described below. Half of these were in relation to spills into waterways and three related to spills to soil. Of the 8, only 5 cases led to fines. The maximum penalties for the breaches under the laws ranges from AUD 125k to 250k. The size of the fines actually given ranged from AUD 10k to 27k. These fines, therefore, were relatively low and closely matched the cost of remedial works required by the polluter to restore damage incurred and prevent future breaches occurring. The volume of used oil involved in the breaches ranged from 2.1 kL to 38 kL. Loss of containment of the used oil from ineffective bunding or inadvertent discharges during handling, were the main causes of the spills. These 8 cases only represent a sample of all violations (including those that did not make it to court) nevertheless they provide an insight into the effectiveness of the legislation in minimising environmental impacts from used oil management and that the industry is actively monitored by the relevant environmental regulators. There are numerous marine oil spills reported in the legal databases but these were outside of the scope of the current review and are not discussed here.

2.3.2. Ownership issues

The question of ownership and hence responsibility for used petroleum hydrocarbons will be crucial in a determination of liability for any environmental incidents that occur. Whilst it is possible to denote ownership contractually, this will not necessarily enable all legal obligations to be contracted out of. Generally speaking, contractual notions of ownership will need to be supported by evidence that due diligence has been exercised in the relevant circumstances. The type of evidence which will be required in this regard will generally involve proof that appropriate enquiries have been made to ensure that the person into whose custody the waste passes, is equipped to manage the waste in an environmentally appropriate manner.

2.3.3. Corporate initiatives, industry standards and codes of practice

Whilst this review focuses on the applicable legislative requirements in the various jurisdictions reviewed, there are also a number of industry codes of practice and standards which will be highly relevant in the establishment and operation of a used petroleum hydrocarbon recycling facility. It should also be noted that a num-

ber of pieces of environmental and occupational health and safety legislation expressly refer to standards and codes of practice. Evidence of compliance or failure to comply with these standards and codes of practice can affect the outcome of any proceedings arising from a breach of environmental or occupational health and safety legislation. Of critical importance is the Australian Standard for the Storage and Handling of Flammable and Combustible Liquids (Tables 1–3), which provides specific guidance on various aspects of facility design and operation in which used oils are handled. In Australia, this particular standard has in effect become legislation as it is a requirement in numerous state laws that this code be adhered to in relation to the storage and handling of flammable and combustible liquids including used oil. Another important standard is ISO 14001 for environmental management. Based on the author's assessment of all major used oil handling facilities in Australia, more than 50% of these facilities have environmental management systems that follow or are certified to this standard. Furthermore, particular industries, including the mining and minerals industry have their owns codes for environmental management or adherence to sustainable development principles and good governance of used oil management is either specified or implied by these principles, either through environmental management responsibilities in the supply chain or through product stewardship commitments.

2.3.4. Role of local government

Local councils in Australia may accept inert solid wastes but most do not have the capability of being able to dispose of petroleum hydrocarbon contaminated wastes which will either be industrial or hazardous wastes. Selected local councils may have the capability of being able to store particular petroleum hydrocarbon contaminated wastes at their facilities on a temporary basis. However, it is possible that specific local governments may have more stringent disposal requirements for used petroleum hydrocarbons than do the state governments which they reside within. Therefore, it is critical that used oil handlers ensure that local government requirements in a particular area are identified.

2.3.5. Reprocessing technologies for used oil management

Reprocessing technologies also have environmental impacts and therefore can contribute to environmental liability in the used oil management industry. This will not be dealt with in detail in this paper though an overview of the relative impacts of the major reprocessing technologies available in Australia are discussed in this section.

The major used oil reprocessor in Australia uses a chemical pretreatment, a propane solvent extraction and de-asphalting process followed by atmospheric and vacuum distillation for producing base oil. Other reprocessors in Australia predominantly deploy thin film and wiped film evaporation and thermal cracking at their facilities to produce their reprocessed oil products (including diesel, diesel extender, burner fuel and re-refined lubricating oil). Each reprocessing technology has specific environmental impacts and these must be managed by the used oil reprocessor. The simplest used oil re-use processes including direct combustion, filtering and dewatering and demineralisation have relatively low environmental impacts due to the relatively low energy input required and the absence of generation of heavy bottom petroleum hydrocarbon fractions to produce these products. The reprocessed products produced from these processes are of relatively low value (i.e. used for combustion purposes). The reprocessing technologies for producing the higher value base oil products (including fuels and re-refined lubricating oils) have higher energy requirements, produce greater amounts of heavy bottoms and waste water. It is noted here that the major used oil handling facilities in Australia operate under site-specific environmental licenses which are regulated and administered by state governments. These licenses set strict emission guidelines for discharge of emissions to soil, air or water.

3. Conclusions

When considering the establishment of a used oil handling business in Australia, the lubricant's life-cycle must be considered and how it is handled at each stage. The findings illustrate the complexities in determining liabilities from handling and mis-handling used oil, which arises partly from the fact that Australia is highly regulated in this area of environmental management. Furthermore, the liability issues become increasingly complex because of contractual issues, as the number of activities and sub-contractors involved increase along the lubricant life-cycle or supply chain. Businesses seeking to establish themselves in used oil handling need to be fully aware of these liability issues and ensure they have management and governance controls in place so they can demonstrate due diligence in the case of a used oil spill or leak.

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