

MANAGING STORMWATER AND TRADE WASTEWATER

02

Straightforward advice to help vehicle repairers get ahead in today's business environment

WHAT DO YOU NEED TO KNOW ABOUT STORMWATER?

Rain running off your business premises travels via gutters, grates and pipes to local streams and eventually ends up in a river, lake, in a harbour or on a beach. If this stormwater is contaminated with oil, paint or other things off your site, it can kill fish and other water life and pollute the environment where we all swim, fish and play.

Vehicle repairers routinely carry out many activities that could pollute stormwater. Keeping stormwater clean is important for your business – and our lifestyle.



A little paint goes a long way in an Auckland stream (photo courtesy of the Auckland City Council)

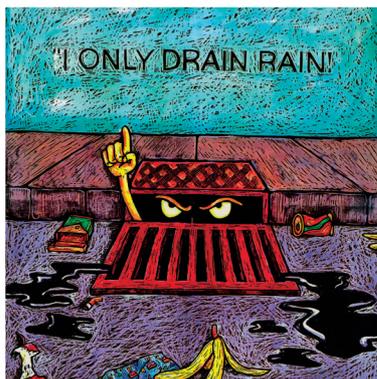
STORMWATER OR WASTEWATER?

Stormwater drains should only carry clean rainwater, so make sure runoff from your vehicle repair premises is free of pollutants by following the tips in this fact sheet.

Wastewater

(sometimes called trade waste) is water that is used or contaminated as part of your business activities. Wastewater from vehicle repair work may contain sediment, oils, fillers and automotive fluids, as well as paint, thinners and other chemicals.

You must discharge this wastewater to the sewerage system or to storage tanks for recycling or off-site disposal by following the tips on *Trade wastewater management – best practices* that follow.



POLLUTANTS

Typical sources of vehicle repair pollutants are:

- washing cars, engines and parts
- fluids like radiator coolant and anti-freeze, used oil, fuels, and brake and transmission fluid from damaged vehicles, engine repair and maintenance, and vehicle dismantling
- wet and dry sanding
- painting
- storing vehicle parts
- cleaning floors and work areas

Typical vehicle repair pollutants that harm human health and the environment are:

- heavy metals like copper, lead, nickel and especially zinc
- hydrocarbons – solvents, oil and chlorinated compounds
- chemicals like paints, detergents, polishing compounds, adhesives and solvents

STORMWATER MANAGEMENT – BEST PRACTICES

For vehicle repairers, stormwater best practice covers:

- keeping your work area clean
- degreasing engines and parts
- degreasing hands
- safely draining, storing and disposing of fluids from vehicles
- controlling runoff from surface preparation
- wash bays and washdown
- storing contaminated parts
- treating stormwater runoff

Keeping your work area clean

- keep clean rainwater separate from dirty work areas
- keep spills and contaminated water out of the stormwater system
- regularly clean work areas to reduce stormwater contamination – your customers and staff will also appreciate clean and tidy business premises

- inspect all incoming vehicles for radiator, oil or fuel leaks. Put drip trays under leaks to collect all fluids, then stop the leaks
- before dismantling a vehicle safely and securely remove all batteries and fluids such as radiator coolant and anti-freeze, used oil, fuels and brake and transmission fluids
- do not hose the workfloor or forecourt unless all the water can be collected for removal or directed into the trade waste system
- if you cannot hose down without getting dirty water in stormwater gutters or grates, try other cleaning options:
 - sweep or wet vacuum the area
 - use absorbent material to remove most of the grime and then use some solvent on a rag to remove the rest
 - paint the workfloor with a non-slippery paint to prevent it from absorbing oil

Draining fluids from vehicles

The mishandling of vehicle fluids released by the repair, maintenance, dismantling, crushing or draining of vehicles causes many environmental problems at vehicle repair and dismantling yards.

The many fluids found in vehicles come from engines, radiators, transmissions, heater cores, brake lines, differentials, all lines and hoses, fuel tanks, air conditioning units and window-washing fluid tanks.

Good management of these fluids helps to prevent spills that can contaminate soil and stormwater. This avoids potentially expensive clean-up costs.

Good management means preventing leaks, spills and stored vehicle fluids from flowing or being washed into soil and stormwater or other pipes where they can harm the environment or pose a risk to sanitary and trade waste systems.

You can:

- drain and collect all fluids from vehicles into containers that have secure lids and are made of materials that are compatible with the contents and won't be damaged by them
- use drip racks, drip tables, screen tables, trays or a liquid vacuum fluid removal system to remove and capture fluids
- store containers and drained parts inside or in a covered, bunded and sealed concrete area away from any stormwater, sewage or trade waste pipes
- clean the storage area regularly to prevent contaminants being tracked out by people or vehicles
- dispose of vehicle fluids via a reputable service – never put them into stormwater or sewer drains, waste bins or onto bare ground: see Waste contractors in fact sheet 3

Degreasing engines and parts

- you can degrease engines in the workshop if you have a wash bay approved by your local council, or if you store the wastewater for treatment and re-use or for disposal by a reputable waste contractor (ask to see the permit that authorises their disposal operations)
- do not degrease engines or parts outside the workshop, or where any runoff can enter the soil or stormwater system
- you can discharge biodegradable products into the trade waste sewer but not into the stormwater system – they harm the environment as they degrade
- wherever possible, wipe parts with rags to degrease them and ensure safe disposal of all used rags by using a commercially available oily waste can
- consider replacing solvent-based degreasing machines with aqueous washer units. These use biodegradable soap, are less labour intensive, cheaper to operate and safer for your staff and business premises than solvent-based systems. Ask your supplier about the benefits and payback time of the change

Degreasing hands

- only degrease your hands over a sink that is connected to the sewer. Do not degrease them where the water can run into the gutter or a stormwater drain
- where there is no sewer, pour the wastewater into a drum for removal and disposal by a reputable waste contractor (ask to see their approval permit)

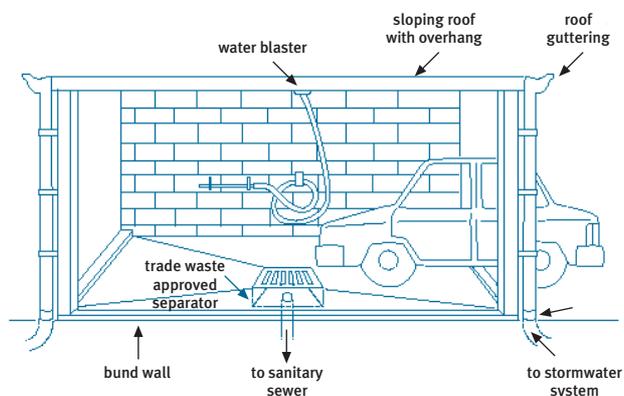
Runoff from surface preparation

- do all your surface cleaning and preparation on a concrete-paved area that is covered and bunded to exclude any stormwater (a bund is a low wall around potential spillage areas to reduce the risk of environmental contamination). See fact sheet 3 for more on bunds

- stop dust escaping from this area by enclosing it and using PPE (personal protective equipment) to protect yourself, or by using vacuum sanding systems. The dust contains heavy metals and other toxic substances, and you need to protect yourself, your staff and your neighbours from it. Use a wet cloth or sponge and a bucket to minimise dust volumes
- use a wet sponge and a bucket to wet sand prepared surfaces
- use a wet/dry vacuum cleaner with bag filter to collect the sludge and dust instead of sweeping and hosing down with water (this will also reduce your water use and lower your water bills). Bag the dust or dried sludge before putting it in the skip for disposal to landfill
- contaminated water from wet sanding or rubbing down must not enter stormwater drains. You have three options for disposing of this water:
 - direct it to the sewer with a low-volume high-velocity hose fitting (you may need approval from your local council – see Trade wastewater management, below)
 - collect and reuse it. For this you need something to treat it and pump it back in to the system. Again, this will reduce water use and costs, and you will only occasionally need to empty dirty water into the trade wastewater system
 - dispose of it via a reputable waste contractor whose permit you have seen
- enclose the wash bay on three sides to prevent splash contamination of the surrounds. Put a speed hump at the entrance to keep water inside. Roof the wash bay to stop rain getting in, and pave the floor with concrete
- connect the wash bay *EITHER* to the sewer, with a trade waste permit (if you need one) *OR* to an underground storage tank that is emptied by a reputable waste contractor whose operating permit you have seen. The wastewater must not drain to the stormwater system. If necessary, clean the wash bay regularly to prevent oil build-up and dispose of the oily waste as outlined in these fact sheets
- use quick-break degreasing compounds and detergents to reduce the emulsification of oils and other hydrocarbons (this makes it easier for you to separate them so you can reuse the water, as well as helping treatment at the wastewater treatment plant if you don't)
- if you lease your premises, consider using a portable wastewater treatment system: it will save you the costs of a permanent installation and you can take it with you or sell it if you move. Look in the Yellow Pages under 'Water treatment' and 'Water and wastewater services' or 'Environmental consultants'
- consider treating and recycling the wastewater or collecting rainwater to use as wash water. Use a bucket and sponge to reduce water use. All these options will reduce your water costs if you buy your water from a reticulated supply (see fact sheet 5 for more)

Wash bays and washdown

- wash vehicles, engines and parts only in an approved wash bay like the one shown below (from the *Vehicle and equipment washing fact sheet* at [www.arc.govt.nz/arc/environment/pollution/fact sheets](http://www.arc.govt.nz/arc/environment/pollution/fact%20sheets)). Ask your city or district council for approval to install a wash bay



Build a wash bay to look something like this

Storing contaminated parts

Store parts that potentially contain contaminants such as oil, grease, fuel, hydraulic or radiator fluid (like radiators and engine parts) inside or in a covered, sealed and bunded area – even after they have been drained – to prevent residual oil from leaking or being washed into the stormwater system.

Treating stormwater runoff

Consider installing a stormwater treatment system to treat all runoff from forecourt and parking areas. An oil separator will remove most of the remnant pollutants you can't control using the practices outlined above.

Correct operation and periodic maintenance of your oil/water separator is important to maintain its effectiveness and reduce pollutant loads discharged:

- maintain the oil/water separator in accordance with the manufacturer's instructions
- clean it out routinely and operate it within the correct operational levels
- minimise the amount of oil reaching the device

Look in the *On-site stormwater management guideline* at www.nzwwa.org.nz/nzwerf to find out more.

CASE STUDY

Pollution problems

One vehicle repair business was directing liquid wastes generated from washing and degreasing to the workshop floor and the surrounding ground, causing soil and water pollution. Vehicle parts containing oil were stored outside, causing more environmental pollution. The plastic floor mats and car seat covers that were used to protect customers' cars were being sent to landfill after a number of uses.

Pollution solutions

- storage racks made from recycled metal are now used to store vehicle components inside
- all contaminated water now drains into a treatment system, and the company has installed bunding around the workshop floor to prevent contaminants getting into stormwater
- the plastic car mats and protectors have been replaced with cloth ones that are washed weekly and reused – a saving to the company as well as to the environment



An oil/water separator for stormwater treatment

TRADE WASTEWATER MANAGEMENT – BEST PRACTICES

For vehicle repairers, trade wastewater best practice covers:

- understanding your trade wastes
- getting a trade wastewater permit if you need one
- treating wastewaters appropriately before discharge to the sewer
- maintaining your treatment system
- keeping all wastes and wastewaters under control and, if possible, out of the rain or under rain-proof cover

Understanding your trade wastes

Trade wastewater (or trade waste) is any wastewater produced by business activity. It does not include wastewater that goes into the sewer from workplace toilets, kitchens or bathrooms, or wastewater from homes. Trade wastewater is not necessarily toxic or harmful but some types can cause problems for human health or the integrity of sewers and treatment plants if put directly into the sewer without first having the problem substances removed or treated.

Getting a trade wastewater permit if you need one

Typically in New Zealand, trade wastewater is managed by city and district councils, many of which require businesses to have permits to discharge their trade waste into the sewage collection and treatment system.

Contact your city or district council to find out about the trade wastewater requirements for your premises.

Treating wastewaters appropriately before discharge to the sewer

The requirement for a trade waste permit generally depends on maximum flow rates, daily volumes and the nature and concentration of the contaminants.

If you need a permit, it will usually set conditions on the discharge relating to these things so as to protect the sewer pipes, pump stations and treatment plant, as well as the people working on them and the environment into which the treated waste is discharged.

Maintaining your treatment system

You need to operate and maintain your wastewater treatment system to keep it working effectively. This may also reduce trade waste and waste contractor charges by reducing the pollutant loads. Make sure that you:

- operate and maintain the wastewater treatment system in accordance with the manufacturer's instructions and the correct operating levels
- clean the system routinely
- minimise the amount of oil reaching the treatment system, to reduce clean-out frequency and contaminant loads – both of these will save money

ACTION STEPS

Check your premises and your paperwork to make sure that you:

- don't let anything other than clean rainwater get into stormwater drains on or near your premises
- minimise exposure of vehicle repair and painting areas to rain and runoff
- clean up all spills and leaks immediately, as explained in fact sheet 4
- prevent any wash water from entering stormwater drains: confine your cleaning and washing to a contained or bunded area where the wastewater is directed to the sewer
- have the approval (if you need it) of your city or district council to direct wastewater to the sewer – or collect the wastewater, treat it and reuse it or have it disposed of properly by a reputable contractor

FIND OUT MORE FROM

- your city, district or regional council
- the Yellow Pages under 'Water treatment' and 'Water and wastewater services' or 'Environmental consultants'

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