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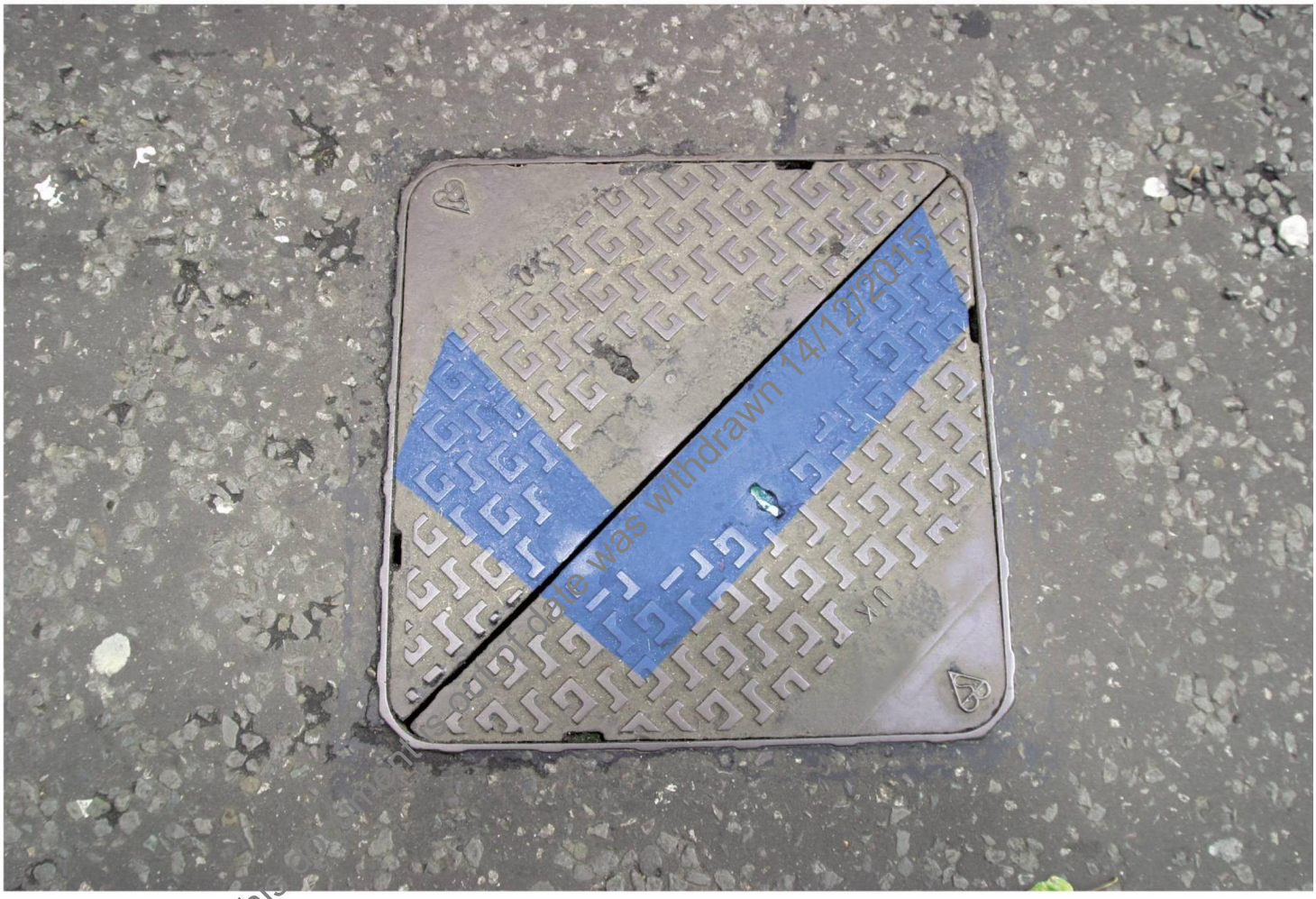
Environment Agency



Pollution prevention pays in England and Wales

January 2013

Pollution prevention pays

Preventing industrial and commercial pollution

Contents

Introduction to protecting the environment and controlling pollution

All industrial and commercial sites have the potential to damage our natural environment. We've produced this pack for businesses to help reduce the risk of causing environmental pollution and protect them from the costs involved in pollution incidents and cleaning them up.

This guidance will help businesses in England and Wales who don't have an environmental permit for all the activities on their site but who may have a permit or exemption for some activities on their site. It may also help businesses with an environmental permit for all their activities. It's your responsibility to check if your activities need a permit or exemption to operate legally. Please see our website, or contact us on 03708 506 506 for more information.

For similar advice for Northern Ireland or Scotland, see section 8, More information 8.

Pollution incidents happen every day as a result of spills, accidents, negligence or vandalism – sometimes the pollutants put human health at risk and often they devastate wildlife habitats, including rivers where they kill fish and destroy the invertebrate life on which fish and other animals feed.

How preventing pollution helps

If you follow the guidance in this pack, not only will you reduce the risk of causing pollution, but it also makes good business sense because you can:

- reduce operating costs;
- not lose valuable materials;
- reduce waste-disposal costs;
- avoid pollution clean-up costs;
- avoid higher insurance premiums; and
- avoid enforcement action and fines.

You should use good environmental practice as part of your sustainable business planning.

Businesses that can show they've taken action to protect the environment and have a good environmental track record are at a competitive advantage, which is important in today's economic climate. You'll maintain your business reputation and project a positive social image if you can show that you've contributed to an improved local environment rather than being featured in negative publicity that surrounds a pollution incident.

What can go wrong?

To cause or allow pollution is against the law. Society is no longer prepared to accept businesses that don't take their environmental responsibilities seriously.

If we find a business has caused pollution, we can use a 'civil sanction' if we think it will give the best outcome for the environment and people. Civil sanctions are an alternative to taking someone to court for an environmental offence. They mean we can:

- help legitimate businesses who are trying to do the right thing correct damage they've done;
- help local people see a direct improvement in the environment; and
- avoid costly and time-consuming court cases.

But we will still prosecute serious offenders.

Magistrates' courts can impose fines of up to £50,000 for pollution offences and, if a case goes to Crown Court, there's no limit to the fine. You could also go to prison. As the 'polluter', you may also have to pay clean-up and court costs.

Even if a case is not taken to court, the cost of repairing the damage to the environment has to be paid for – these costs can be very large and the environment can take years to recover.

A pollution incident costs an average of £30,000 for businesses in fines, clean-up charges and production losses. But remediation costs – fish restocking, removing contaminated land or cleaning up groundwater – can be tens of thousands, if not millions, of pounds. In most cases, your standard liability insurance won't cover this cost and your insurance premiums are likely to rise.

But the effects of an incident go beyond direct financial fines and costs. They can include:

- damage to your business reputation and the ability to win or keep contracts;
- loss or damage to materials and assets you've already paid for; and
- interruption to your daily business.

Ask yourself: 'Can I afford this to happen?'

The Environment Agency

We are the regulator responsible for protecting and improving the environment in England and Wales. We control pollution by authorising complex industrial processes, issuing permits for waste activities and discharges to surface water (inland freshwater, such as rivers, lakes, canals and streams and coastal waters) and groundwater (water in spaces between underground rocks). We also regulate the use of water taken from the environment for drinking-water supplies, industrial processes and agriculture. We have powers of enforcement and can prosecute to protect the environment. We prefer to advise and help, but will take enforcement action or prosecute offenders where necessary.

Our officers are on call 24 hours a day, every day, to respond to pollution emergencies and can often give on-the-spot advice to reduce the effects of a pollution incident. You can call our incident hotline, 0800 80 70 60, free at any time to report an incident and get advice.

Managing waste

We regulate and monitor waste-management facilities (keeping, treating and disposing of waste) to protect the health and wellbeing of the environment and the community. We also monitor businesses that produce waste. Waste from a business represents the loss of valuable resources and presents a risk to the environment if it is not treated carefully. It's usually possible to reduce the amount of waste produced and to increase what's reused and recycled without extra costs. It may also save you money.

Water quality

We protect water quality because it's vital for:

- us, in terms of:
  - leisure activities;
  - drinking water; and
  - industry and agriculture; and
- the natural environment, in terms of:
  - habitats;
  - ecosystems;
  - wildlife and fish; and
  - environmentally sensitive sites, for example nature reserves and wildlife habitats.

Rivers and groundwater are used as a source of public drinking water. Groundwater is stored naturally in porous rocks called aquifers. About 35% of the public water supply is taken from groundwater, which supports industrial and agricultural uses, and thousands of private homes rely on their own wells and boreholes. Groundwater is also important for maintaining river flows and wetlands. In the past, pollutants and effluents were often disposed of onto land and, by seeping through the soil. This caused land to become contaminated and polluted groundwater which made the water unusable without costly treatment. There are regulations to protect groundwater. These mean you need approval from us for activities that involve discharging a pollutant to the ground.

Most discharges to the water environment, whether from industry, sewage treatment works or other sources, need a permit from us. This is a legal requirement and the permit contains conditions that relate to the quality and quantity of what can be discharged. If you make a discharge of trade or sewage effluent to the water environment without a permit, you're probably breaking the law.

Our corporate plan includes aims for us to:

- improve and protect inland and coastal waters;
- contribute to wiser, sustainable use of water as a natural resource;
- create better habitats for wildlife that lives in and around water; and
- create a better quality of life for everyone.

Helping you and your business reduce your pollution risk means we're working to meet the Water Framework Directive (WFD) requirements. The WFD will help us protect and enhance (improve) the quality of surface water and groundwater.

Air quality

Emissions to the air can affect people's health, cause nuisance in terms of smells and damage the natural and built environment. We regulate the release of pollutants to the air from large or more complex industrial processes and waste-management facilities, such as landfill sites. Local authorities are responsible for managing local air quality and regulate emissions of pollutants to the air from smaller processes. Even if you don't need a permit from us, please contact your local authority for advice on whether you need a permit for a release from your process.

Noise and light

Noise and light pollution aren't covered in this publication. However, you should consider them when you assess the environmental effect of your site. You can get advice from your local authority on reducing noise.

Built environment

The built environment isn't covered in this publication. You should check if you need to consider the effects of your activities on existing buildings, especially listed buildings, or archaeological sites.

Get your site right with the pollution prevention pays pack

The pack (booklet, posters and accompanying DVD) will help you prevent pollution from industrial and commercial sites. An environmental review is the first step towards developing an environmental management system (EMS) which will allow you to plan how to deal with the immediate and long-term environmental effect of your products, services and processes. Your review should include legal requirements, areas of risk, how you will manage resources and reduce waste as well as manage community relations. We and other independent organisations can help. See section 8, More information, for details of how to contact us and other organisations.

'Pollution prevention pays' offers tips on good practice and ideas for improvements, many of which you can put into practice for little or no cost. It's your responsibility to make sure you keep to (comply with) all the relevant environmental laws at all times.

Where we use ‘must’, these guidelines and **action points** refer to environmental legislation you **must** follow in England and Wales. Otherwise our advice is good practice and not a legal requirement. If you have an environmental permit, some of the good practice may be included as a permit condition and you must comply with all your permit conditions.

Environmental protection – is your site right?

You can make your site right and protect the environment by putting into practice the action points on the following pages for the activities and areas listed below.

Site drainage – a good knowledge of all the drainage systems on your site is basic to preventing pollution.

Deliveries and handling materials – delivering and handling materials, such as oils, chemicals and food stuffs, around your site is always a high-risk activity. Good working practices are essential.

Storage – poor storage of oils, chemicals and other materials is a major risk to the environment.

Managing waste – you should use resources carefully and reduce the amount of waste produced to save money and resources. Legally storing and disposing of waste is an essential measure to prevent pollution.

Trade effluent – liquid effluents produced by a commercial or industrial process are known as ‘trade effluents’ and there are special things to consider when you dispose of them.

Protecting groundwater – you can’t see groundwater, but it’s important you don’t forget about it. Make sure you protect it from pollution.

Training, emergency planning and response – effective emergency response comes from good planning and training. This plays a crucial role in protecting the environment. Trained and knowledgeable staff can help prevent or reduce the effects of a pollution incident – saving both money and time.

Use the **action points** as a checklist. Date each one as you put it into practice if it applies to your site.

1 Site drainage

A good knowledge of all the drainage systems on your site is basic to preventing pollution.

There are two types of system – separate and combined.

The **separate drainage system** has two different drains – foul water and surface water. Drains are also known as sewers.

The foul-water drain or sewer carries contaminated water (sewage or trade effluent) safely to a sewage treatment works, septic tank or cesspool or cesspit.

The surface or clean-water drains should only carry uncontaminated rainwater because they lead directly to ditches, streams, rivers or soakaways. Roadside drains will usually be connected to the surface-water system.

The **combined drainage system** has one drain, which carries both foul and surface water to a sewage treatment works. This type of drainage tends to be used in older urban areas and city centres.

Drains owned by sewer providers are known as mains drainage, main sewers or public sewerage systems.

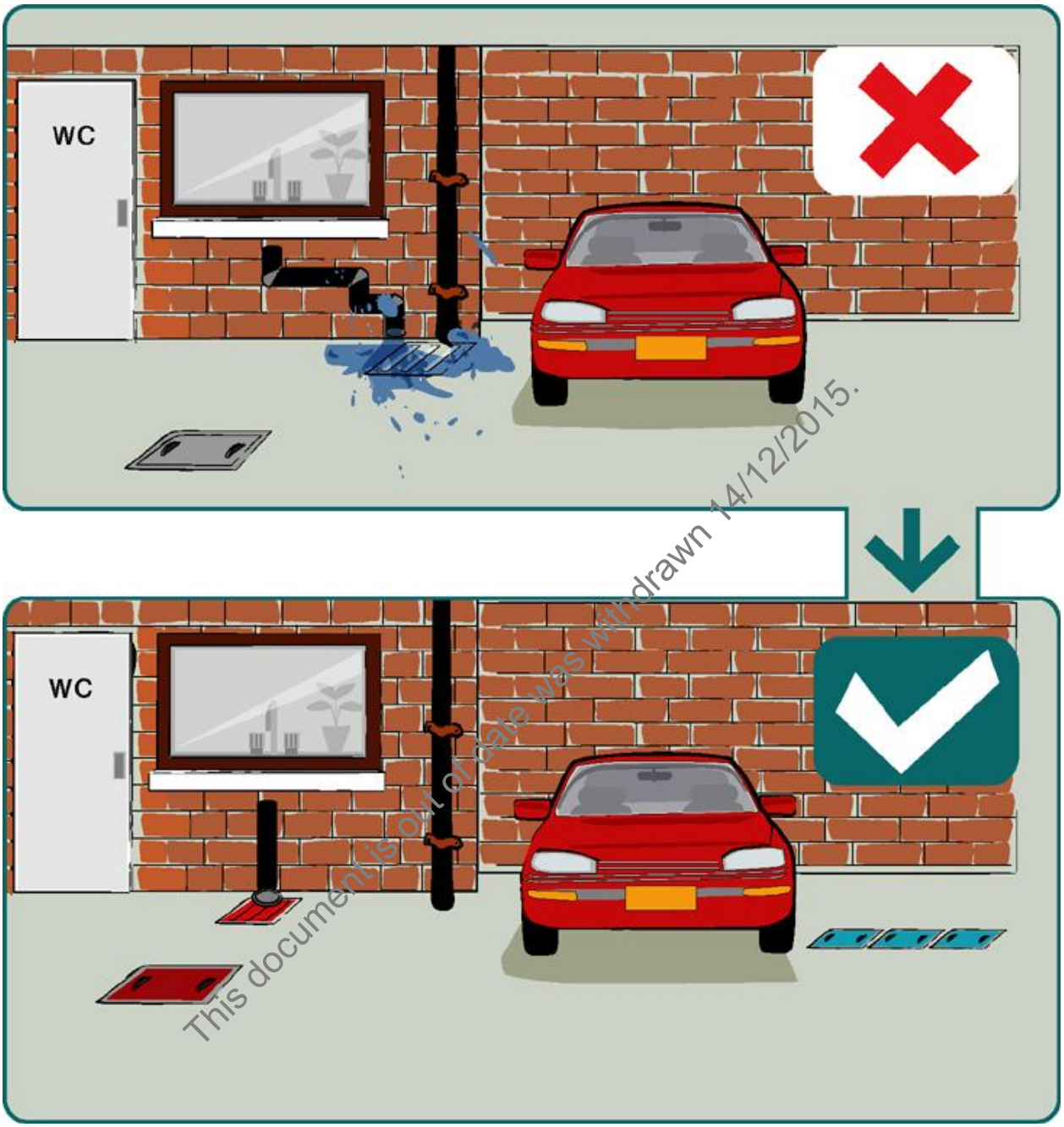
You should know which system every manhole, drainage grill or gully on your site is connected to: foul, surface or combined drains. Without this knowledge, it's impossible to be sure all your drainage is connected to the right system. Wrongly connected drains and effluents can cause severe pollution and they are expensive and time-consuming to trace.

You should also know the location of any fixed pollution control structures, for example penstock valves, on your system. If you have these, it's important to know how to use them and where flow will collect or be diverted to (see section 7).

Action points

	Date completed
• We recommend you produce a comprehensive and up-to-date **drainage plan** of your site. It should identify all the drains on your site and show where outfalls for surface water drains are and if your foul drains flow to the local sewage treatment provider for treatment or to a private treatment plan. Include any oil separators, catch pits, silt traps, soakaways or shut-off valves. If you don't have the expertise to do this, use a reputable drainage company. Make sure key staff are familiar with the plan, which should be readily available.	__ / __ / ____
• Check drainage plans before you carry out any new building work. New connections **must** be made to the right drainage system. Update the drainage plan to reflect any changes or additions.	__ / __ / ____
• Make sure all your all manhole covers, drainage grills and gullies are colour coded so it's easy to identify what type of drain they are. Paint foul-water drains red and surface-water drains blue. Paint combined drainage systems with a red letter C. Make everyone (including service personnel and contractors) aware of the colour-coding system.	__ / __ / ____

- Make sure you have no wrongly-connected drains or effluents on site, especially where trade effluent is generated (see section 5, Trade effluents). Make sure you include these facilities in your checks. They **must** be connected to the foul or combined drainage system. __ / __ / ____
  - Staff break rooms
  - Laboratories
  - Darkrooms
  - Toilets
  - Showers
  - Sinks
  - Canteens
  - Washing machines
  - Dishwashers
  - Air-conditioning units
- You should check you only discharge clean uncontaminated water (for example roof water) or liquid for which you have a valid environmental permit to the surface-water system. You can get information on wrong connections from 'Connect right'. See the useful websites on page 26. __ / __ / ____
- You should seal all ducted cable ways so they don't create uncontrolled drainage routes. __ / __ / ____
- We recommend you make someone responsible for the upkeep and maintenance of any private sewage treatment systems you have, for example a cesspool, septic tank or package plant, to which your foul drains are connected. __ / __ / ____
- Check if you **must** have an environmental permit for any discharges, except uncontaminated surface water, from your site to surface waters or groundwater. See our website or call our customer service line on 03708 506 506. __ / __ / ____
- We recommend you check if you need permanent drainage isolation facilities, such as penstocks, valves or emergency containment systems, on high-risk areas or as part of your site's emergency procedures to prevent spillage or run-off polluting the environment. Contact us for advice about isolating high-risk areas and sites. __ / __ / ____
- You should have oil separators on any surface-water drain at risk from oil pollution, particularly fuelling and vehicle parking areas. This may be a requirement of an environmental permit. __ / __ / ____
  You may need an environmental permit for the discharge from the separator so check with us. We produce a guidance note on separators (see section 8, More information). Contact your local office if you need more advice, **but remember** separators:
  - should be the right size for the area being drained;
  - will not retain soluble oils (for example biofuels);
  - should be maintained and regularly emptied (oil and silt); and
  - will not work if detergents, for example from washing vehicles, are present.



Pollution facts

A significant number of pollution incidents are caused each year by vandalism and theft. Keep one step ahead of potential intruders!

Oil is a particularly harmful pollutant. A small amount of oil causes a large problem. Five litres of oil can cover an area of water the size of two football pitches.

Litter is a pollutant too, and **must not** be allowed to enter a watercourse.

2 Deliveries and handling materials

Delivering and handling materials, such as oils, chemicals and food stuffs, around your site is always a high-risk activity. Good working practices are essential.

You need to take special care when you receive a delivery, load, unload and transfer all materials, particularly hazardous substances, to avoid spills and accidents. You should identify these risks to reduce them as far as possible.

Storage and dispensing systems that are designed to fit your needs can reduce your pollution risk. For example, pumped dispensing from storage tanks is preferable to gravity draw-off. Storing materials close to where they're needed reduces the need for materials to be moved around the site and lowers the risk of accidents or spills. Avoid manual handling wherever possible to reduce the risk of mistakes and accidents. If you need access for vehicles or fork-lift trucks, provide properly-designed ramps that don't increase your risk of a spill.

Make someone responsible for supervising deliveries to help avoid spills and prevent damage to the environment. You can save valuable raw materials and avoid potential legal action.

Handling materials that aren't liquid or solid at ambient temperatures involves special consideration that's outside the scope of this publication. Get advice from your supplier.

Deliveries action points

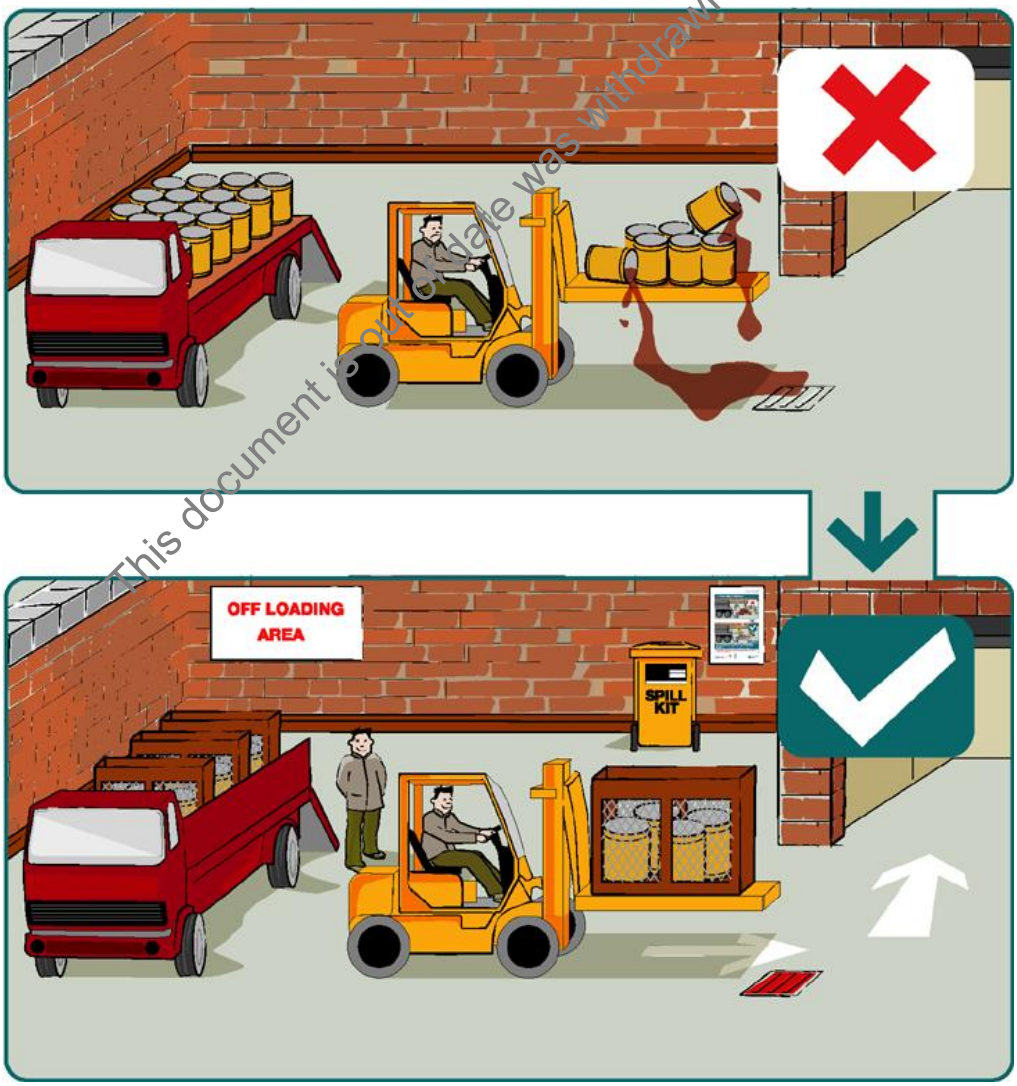
	Date completed
• Make sure you have designated areas for all **loading and unloading activities**. They should:	
a be clearly marked;	__ / __ / ____
b drain to the foul sewer if possible or, as a minimum, be isolated from the surface water drainage system, for example using raised kerbs, separators or sumps both with isolating valves;	__ / __ / ____
c have a roof, where possible and safe, to prevent rainwater from building up;	__ / __ / ____
d be on an impermeable surface so drips and spills can't soak into the ground; and	__ / __ / ____
e have a supply of pollution-control equipment suitable for the materials you load or unload (see section 7).	__ / __ / ____
• We recommend you only keep working quantities of materials stored on site.	__ / __ / ____
• Storage containers and pipework should be well-designed, fit for purpose and **must** keep to (comply with) any relevant regulations, for example relating to storing oil.	__ / __ / ____
• We recommend you develop and put into practice procedures to check the condition of storage containers and storage levels before you order and receive a delivery to prevent loss of product, for example by overfilling or tank failure.	__ / __ / ____
• Make someone responsible for supervising all deliveries. Train them to respond to accidents and emergencies (see section 7).	__ / __ / ____

- If you have bulk storage tanks, make sure you have:
  a labels on each delivery point stating what material should be delivered and the maximum volume the tank to which it's connected can hold; __ / __ / ____
  b appropriately-sized drip trays on all delivery pipe inlets (remove any spilt material immediately after delivery); and __ / __ / ____
  c an automatic cut-off device or alarm to prevent spills through overfilling – this may be a legal requirement for oil tanks where the vent pipe can't be seen from the delivery point (see section 3, Storage). __ / __ / ____

Materials-handling action points

Date completed

- Identify routes around your site to transfer materials and keep them clear at all times. __ / __ / ____
- Assess the potential for environmental damage when materials are transferred and moved and take action to reduce the risk (see sections 3 and 7). __ / __ / ____
- Have an incident response plan. See PPG 21 for more information. __ / __ / ____
- Make sure everyone knows what to do if there's a spill or other accident (see section 7). __ / __ / ____



3 Storage

Poor storage of oils, chemicals and other materials is a major risk to the environment.

The potential for accidental spills is greatest during deliveries and dispensing, but storage containers (for example, tanks, intermediate bulk containers (IBCs), drums, and bowsers) are also a risk.

Plan your storage so it's designed, sited and maintained to protect the environment. Consider protecting materials from extremes of temperature and weather that could damage your storage and cause pollution. If you're storing flammable substances, check how close your planned storage is to sources of ignition, for example electric cables and overhead lines.

Store materials in secure buildings where possible. Use secondary containment systems to prevent materials escaping. You can reduce the loss from any damaged containers beyond the secondary containment system by keeping the container as low as possible. You can also provide deflection screens that direct any potential discharges into the containment system. If you have open secondary containment, it might be more cost effective to add a roof to the facility or replace the tank with an integrally-bunded tank system so you don't have to dispose of waste water which collects there. Avoid storing materials on roofs as it's high risk because the contents may drain to the surface-water system via guttering and cause pollution.

If you store materials that are solid at ambient temperatures, there's less chance these can cause pollution than liquid storage. However, you still need to consider how they can be protected from damage, theft and vandalism, all of which can cost you money and mean you generate more waste which you have to pay to have removed. Where possible store all your materials indoors or under cover and make sure you have suitable security or a secure store or area.

There are special conditions for storing materials that aren't liquid or solid at ambient temperatures. We do not cover this in this publication. Please get advice from your supplier.

Action points

	Date completed
• Put storage facilities at least 10 metres away from watercourses, open drains, gullies, unsurfaced areas or porous surfaces (to prevent groundwater pollution) and at least 50 metres from any wells, springs or boreholes.	__ / __ / ____
• We recommend you have a maintenance schedule for storage facility inspections and carry out any remedial work promptly. Keep a log of completed work.	__ / __ / ____
• Make someone responsible for regularly inspecting and maintaining your storage areas and containers. They should: ◦ visually check for damage, corrosion and leaks; ◦ check for damage to pipework (you may need to lift inspection hatch covers); ◦ have damage repaired as soon as possible and keep a log of completed work; ◦ match delivery and use volumes to identify differences as a sudden drop in the volume stored that can't be explained by what has been used may mean you have a leak; and ◦ regularly remove any rainwater that has collected in open containment systems. The waste water must be disposed of legally (see section 4).	__ / __ / ____
• Protect all pipework against corrosion and physical damage (for example collision, vibration and ground disturbance).	__ / __ / ____

- Pipes below ground should have an inspection hatch to check any mechanical joints, those that aren't welded, braised or soldered. __ / __ / ____
- Above-ground pipes should be supported, for example using brackets. __ / __ / ____
- Secure your site and storage areas to prevent vandalism and theft, for example fit locks on storage system valves, taps, hatches or lids and delivery hoses and keep them locked when they're not in use. __ / __ / ____
- You should keep a supply of pollution-control equipment with or near your storage and make sure people are trained how to use it (see section 7). __ / __ / ____

3.1 Above-ground storage

In England, above-ground oil storage containers (for example tanks, IBCs, drums and mobile bowsers) greater than 200 litres **must** comply with the **Control of Pollution (Oil Storage) (England) Regulations 2001.** (See 'Keep your oil safe; the control of pollution (Oil Storage) (England) Regulations 2001' and 'Above ground oil storage: PPG 2' or the government online business advice and support service. See useful websites for more details. You should find out if oil storage legislation applies to your above-ground oil store as some of the action points below may be a legal requirement.

In Wales there are no equivalent oil-storage regulations.

The action points are environmental good practice for storing all non-oil materials. It's your responsibility to check if any health-and-safety regulations also apply to your stores.

Avoid underground pipework. Faults are very difficult to detect and leaks can contaminate groundwater. You may not be allowed underground pipework because of the environmental risk. You can get more information in our Groundwater protection: Principles and Practice (GP3) documents. If they have to be underground, pipes should be laid in an impermeable duct, have inspection chambers at all mechanical joints and be tested regularly to make sure they're not leaking. These may be legal requirements for storing oil above ground. Mark their route clearly on the ground and on all site plans.

Action points

Date completed

- Make sure your storage containers are fit for purpose and clearly labelled with the type of product, maximum capacity and information on health and safety and environment protection. __ / __ / ____
- You should design storage areas to separate incompatible chemicals so they can't react. You can get information from the Health and Safety Executive. __ / __ / ____
- Make sure storage areas and containers are protected from impact damage. __ / __ / ____
- Make sure your storage tanks, IBCs and bowsers for chemicals, oils and raw materials have an impermeable secondary containment system that can hold at least 110% of the tank's maximum capacity. The secondary containment should have no drain-down outlet or connection to the environment. __ / __ / ____
- Make sure your drum storage has secondary containment with at least 25% capacity of the total drum volume, for example a purpose-made container store, bunded pallet, drip tray or kerb-bunded area – preferably roofed. __ / __ / ____

- Ancillary equipment for your containers (for example, local fill and draw-off facilities, vent pipes, sight gauges, taps or valves) should be within the secondary containment. __ / __ / ____

3.2 Underground storage

Storing oils and chemicals underground is a threat to groundwater (see section 6, Protecting groundwater). The Environmental Permitting Regulations 2010 allow us to serve prohibition notices that require you to apply for a permit or stop an activity that is causing, or is likely to cause, pollution. The Water Resources Act 1991 (as amended) allows us to serve notices requiring you to complete work to prevent or clean up groundwater which has been polluted.

Avoid storing oils and chemicals underground unless it's absolutely necessary. Underground storage is harder to check for damage to the system or leaks. Spills and leaks are difficult to clean up and can be extremely expensive. New underground storage for hazardous substances will not be allowed in groundwater Source Protection Zone 1 (the area around a groundwater source where pollution would reach the source within 50 days) and may be restricted in other places. You can find out more by using our interactive groundwater maps. See the action point below or in Groundwater protection: Principles and Practice (GP3). You may need planning permission from your local authority for any new underground storage tanks.

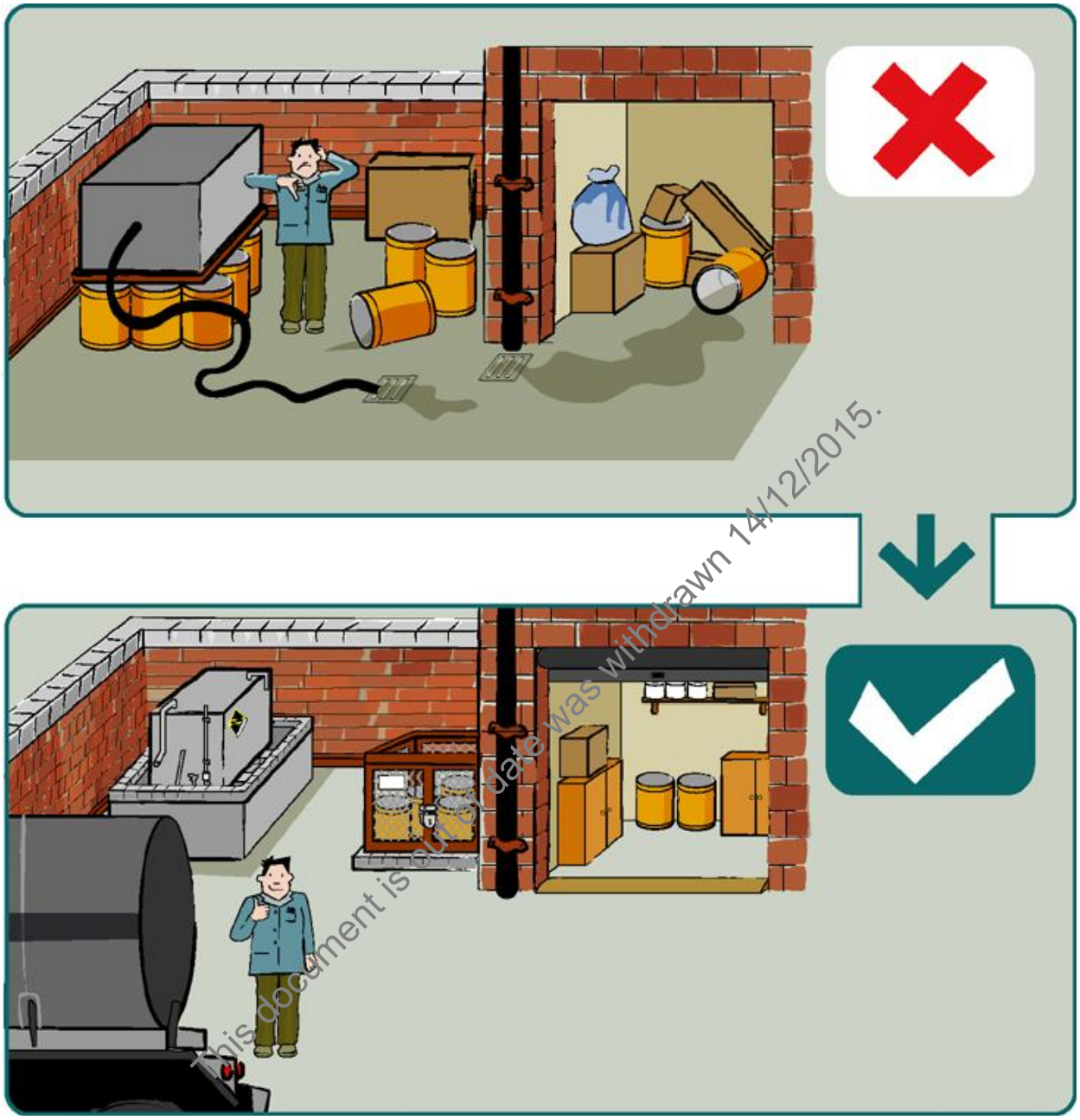
If you can't avoid underground storage, see 'Underground storage tanks: PPG 27' or contact your local office for advice. It's vital that you can manage your stock levels, inputs and use of materials so you can identify if you have a leak.

Statutory codes of practice, for underground petrol tanks, sheep dip and solvents, made under the former Groundwater Regulations but still current, contain requirements and advice for storing oil and chemicals underground. You must find out if these regulations apply to your underground storage.

Action points

Date completed

- If you have underground storage, check online if your site is in a sensitive groundwater area at 'What's in your backyard?'. Look for groundwater in the interactive maps. You may need to put more careful management procedures in place. Ask us for advice. __ / __ / ____
- Reduce the risk to groundwater by having good leak-detection facilities, management, maintenance and emergency procedures. __ / __ / ____

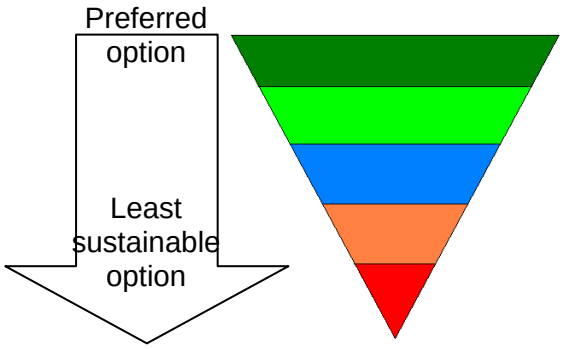


4 Managing waste

You should use resources carefully and reduce the amount of waste produced to save money and resources. Legally storing and disposing of waste is an essential measure in preventing pollution.

Managing and disposing of waste depends on strict legal controls. You should find out how these regulations affect your business and if you need an environmental permit or an exemption. Our website provides full details of waste legislation and what you need to do. Contact your local office for advice.

The Waste Framework Directive has put greater emphasis on the 'waste hierarchy' to make sure waste is dealt with in the priority order of:



1 prevention

2 preparing for reuse

3 recycling

4 other recovery (for example, energy recovery)

5 disposal

If you import, produce, collect, transport, recover or dispose of waste, you must use the waste hierarchy above when dealing with all your waste. You should build this into your business practices. Give priority to stopping waste being produced. If it's not generated, you don't need to treat or dispose of it. Then reuse and recycle to reduce your waste even more. The last options are other recovery then disposal. Waste disposal is more expensive and is more likely to cause pollution than any other option.

Cost isn't the only issue. Many of your potential customers will ask about your business environmental credentials. Taking a sustainable environmental approach can boost your company image and help you gain commitment from employees.

4.1 Being efficient with resources and reducing waste

Reducing your business waste is about being efficient. It means using less (which also means spending less), getting the most out of what is used and recycling whatever is left. By becoming more efficient, your profits will increase and you save resources and help the environment.

A first step to understanding your waste is to carry out a waste review. You should include energy, water, raw materials and trade effluent in your review. This will help you save money on raw materials and the cost of waste disposal. For example, work with your suppliers and distributors to find ways to get rid of or reduce the amount of packaging.

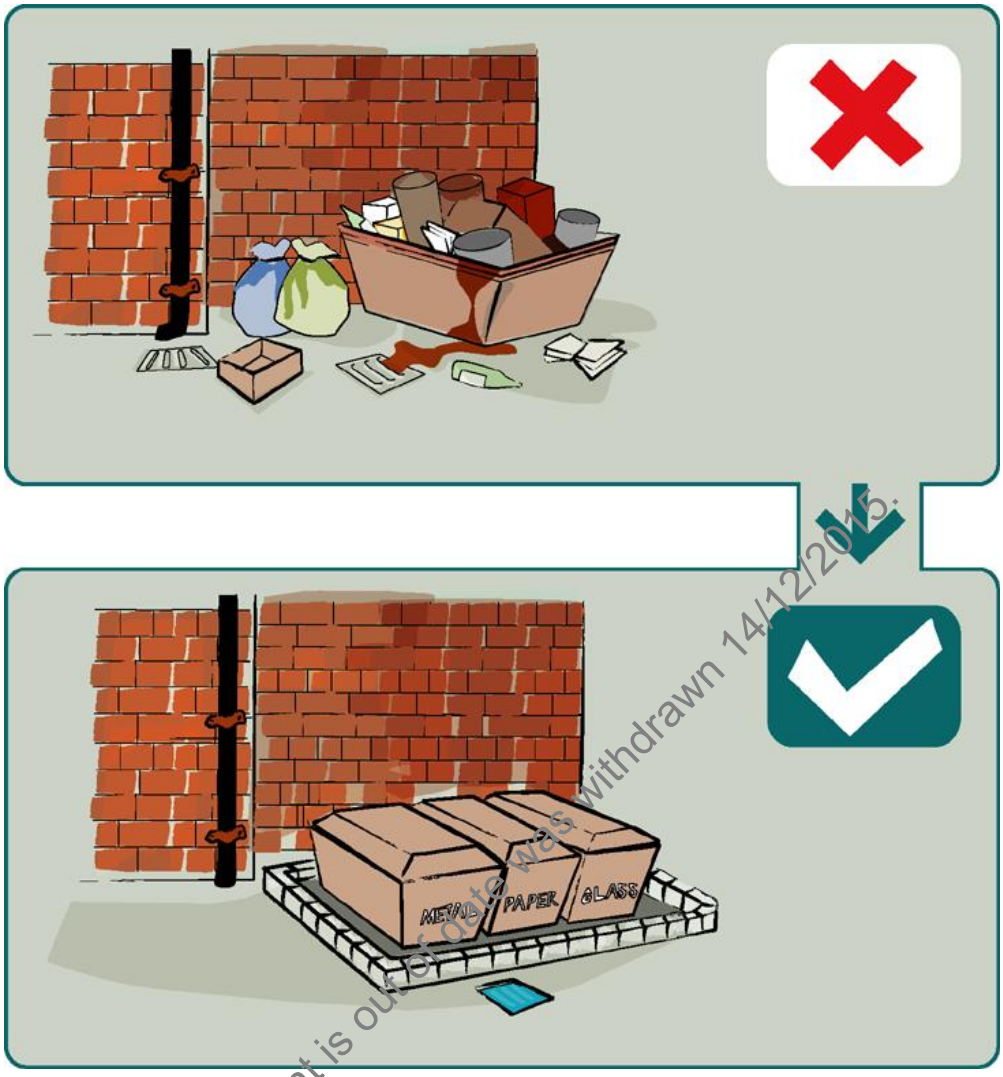
You can get free independent information on using resources efficiently and reducing waste from 'Wrap', including publications, events and advice. See section 8 for contact details.

Action points

	Date completed
• Carry out a waste review and consider methods to reduce the volume of waste you produce.	__ / __ / ____
• We recommend you reuse your waste or buy products that can be reused – it will save money in the long term.	__ / __ / ____
• Recycle or recover as much waste as possible. Your local council or waste contractor should know about the facilities in your area.	__ / __ / ____
• Try to substitute materials for less hazardous ones, for example biodegradable lubricants and solvent-free paints.	__ / __ / ____

4.2 Waste-storage action points

	Date completed
• You **must** have separate storage for non-hazardous and hazardous waste. Separate and label both wastes for recycling and hazardous waste and keep them away from general waste. Don't mix or dilute hazardous wastes.	__ / __ / ____
• Make sure waste compactors, which can produce highly polluting run-off, are on an impermeable surface that's isolated from surface drainage systems. Drain the area to the foul sewer, with the permission of the local sewer provider, and provide a roof to reduce any run off.	__ / __ / ____
• Always store waste in containers that are fit for purpose and large enough to avoid loss, overflow or spills.	__ / __ / ____
• You should store all waste and waste containers in designated areas, which are isolated from surface-water drains or direct discharge to the environment. The area should be able to contain spills.	__ / __ / ____
• Make sure your waste storage is secure and protected from the weather, for example cover or enclose skips if they aren't stored undercover.	__ / __ / ____
• Store incompatible chemicals separately so they can't react. You can get information from the Health and Safety Executive.	__ / __ / ____



4.3 Waste-disposal action points

Date completed

- Have your waste collected frequently. Don't allow large quantities to build up. You must have your waste removed from site at least every 12 months. __ / __ / ____
- Under the 'Duty of Care', you have a legal duty to make sure any waste you produce:
  - doesn't escape your control;
  - is transferred only to an authorised person (for example, registered or exempt waste carrier or authorised waste manager);
  - is accompanied by a waste transfer note when it's transferred to another person – among other information this must include a full description of the waste, the SIC code of your business and confirmation that you've taken account of the waste hierarchy; and
  - is disposed of legally. If your waste is found fly tipped, you are responsible unless you can show you transferred your waste to an authorized person.

  Make sure you do this every time your waste is removed from site.

  This is your responsibility, not the contractor's. Check our website for details.
- Check your waste contracts to confirm the sites your waste will be taken to are authorised to accept the types of waste you send. __ / __ / ____

- If you take your own waste to a permitted disposal site, you may need to register as a waste carrier. __ / __ / ____
- Don't burn waste in the open air. In many cases it's unlawful. Dispose of waste in a way that is legal and is less harmful to the environment. Contact your local office for advice or visit the Government's online business advice and support service (see 'Useful websites' in section 8, More information). __ / __ / ____

4.4 Hazardous waste

There are stricter controls for storing and moving hazardous waste. It's important that you get this right.

Most businesses produce some hazardous waste such as:

- electrical waste – fluorescent tubes, computer screens, fridges, freezers and some types of batteries;
- chemicals, often identifiable by the hazard symbols on packaging – non-edible oils, paints, inks, solvents, disinfectants, cleaning agents, photochemicals and aerosols;
- contaminated packaging – plastic, glass, paper drums, bottles, bags or containers with residues of hazardous chemicals; and
- vehicles – cars, vans, trucks and motorcycles.

Action points

Date completed

- You **must** register your business premises with us as a hazardous waste producer if it produces 500kg of hazardous waste, or more, in any 12 months. __ / __ / ____
- You **must** include a consignment note when hazardous waste is removed from your premises. __ / __ / ____

4.5 Records and registers action points. You must keep:

Date completed

- transfer notes from non-hazardous waste movement for two years; __ / __ / ____
- records of the registration for any premises you have registered with us as a hazardous waste producer; __ / __ / ____
- consignment notes from moving hazardous waste for three years; and __ / __ / ____
- copies of your waste-contractor carrier registration, permit or exemption. __ / __ / ____

5 Trade effluent

Liquid effluents produced by a commercial or industrial process are known as 'trade effluents' and there are special things to consider when you dispose of them.

Trade effluents are polluting and must not be discharged to the surface-water system or in an uncontrolled way to the ground.

Some effluents may be small in volume or may not look dirty, but they can still cause pollution if they're disposed of illegally, for example:

- compressor and boiler blowdown;
- cooling water;
- steam condensates;
- air-conditioning condensates;
- compactor run-off;
- pressure-testing liquids;
- buckets of cleaning water; and
- concrete wash-out water.

Your waste review will have helped you reduce the volume of trade effluent you produce. After reducing your effluent, the best environmental option is to discharge it to the public foul sewerage system with the permission of the local sewerage provider. You will need a 'consent to discharge' for this. The sewerage provider may put conditions on the quality and quantity of a discharge, and, depending on the nature of the effluent, you may need to treat it before it's discharged.

If you can't discharge trade effluent to the public sewerage system, you'll need a different option to dispose of your effluent.

This could be using a private treatment system which is designed to treat all effluents connected to it. You will need a permit from us for any treated trade effluent discharged to the environment (check with your local office). It's unlikely that we would give permission to discharge trade effluent to the ground. Connecting trade effluent to private sewage treatment facilities is likely to cause pollution. See 'Treatment and disposal of sewage where no foul sewer is available: PPG 4' for information.

If treatment or sewage-disposal options aren't possible, you'll need storage and off-site disposal for your trade effluent. Laws on managing waste will apply (see section 4).

You can find more information about trade effluents in 'Introducing pollution prevention: PPG 1'.

5.1 Trade-effluent action points

	Date completed
• Make sure all your treatment plants, including storage vessels and chemical storage areas, are isolated from surface-water drains.	__ / __ / ____
• Put management systems in place to maintain treatment plants and trade-effluent drainage systems. Check them at least once a week for leaks.	__ / __ / ____
• Make sure your site drainage plan includes trade-effluent drains, gullies and discharge points.	__ / __ / ____
• All your trade effluents **must** be correctly connected to the foul sewer (see section 2, Site drainage).	__ / __ / ____

5.2 Cleaning

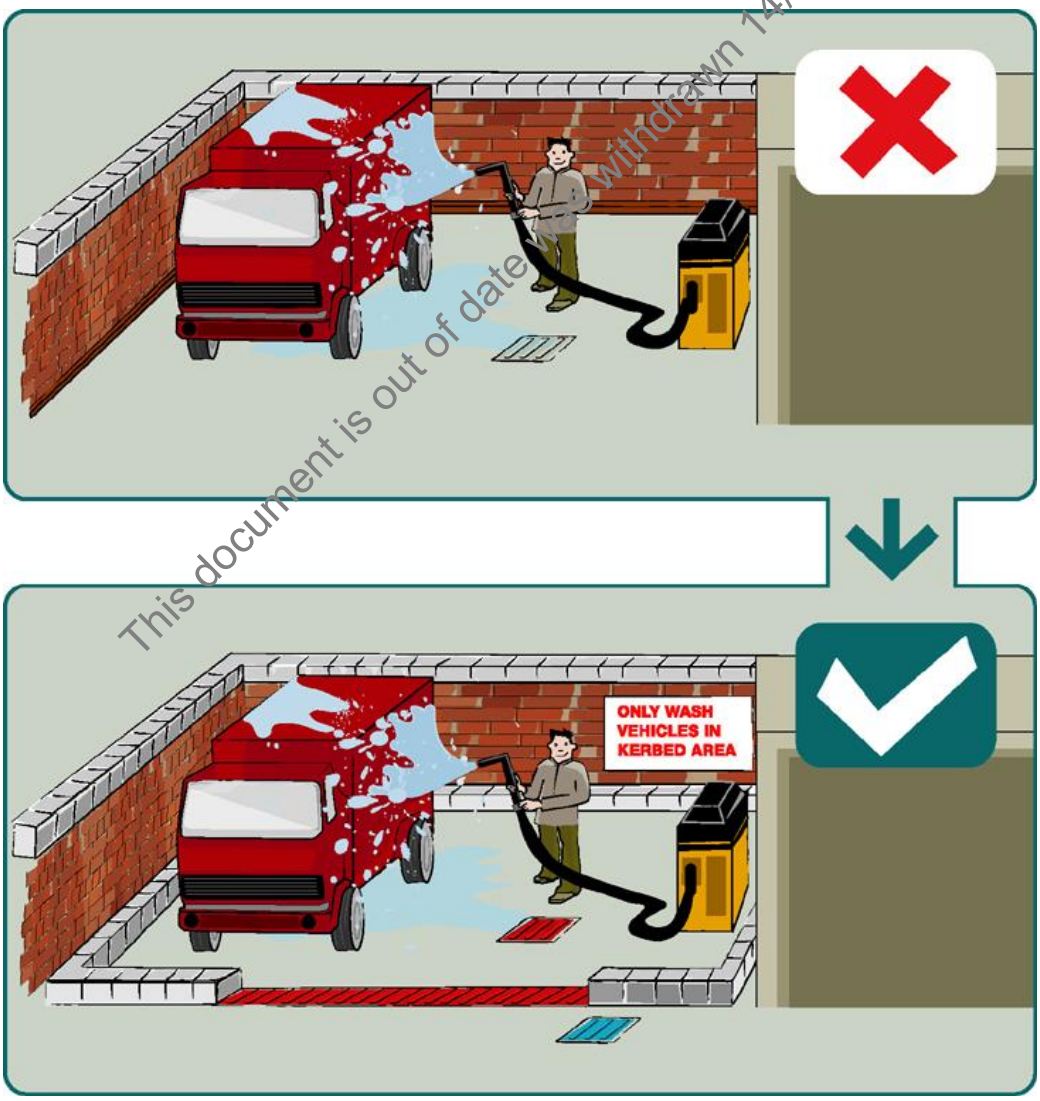
Vehicles, parts, plant and equipment, floors, surfaces and containers are cleaned on site every day, by hand, pressure washers or other cleaning equipment. All these activities create dirty water and you need to carefully consider how you dispose of this effluent. All cleaning agents are potential pollutants, as are the materials they are intended to remove. These include detergents (even the biodegradable ones), disinfectants, degreasers, dirt and oil. See 'Vehicle washing and cleaning:

PPG 13' for information. **Don't** allow detergents to enter oil separators as the oil will be washed through.

Action points

Date completed

- Carry out all washing or cleaning operations, including steam and pressure washers, in a clearly marked, designated area. This includes cleaning vehicles or plant. __ / __ / ____
- Isolate all cleaning or wash-down areas from the surface-water system and unmade ground or porous surfaces by using drainage grids, gullies or kerbs. Washing water should drain or be disposed of to the foul sewer. Check with your local sewerage provider before you dispose of it. __ / __ / ____
- Make sure all contractors or cleaners know where they can dispose of waste waters properly. __ / __ / ____
- If your yard areas are cleaned, make sure the dirty run-off water can't enter surface-water drains. __ / __ / ____



5.3 Dewatering

It's often necessary to remove excess water from excavations or from underground inspection and maintenance service chambers. This is known as dewatering. You must check with us if you need an environmental permit before you can start dewatering.

Large volumes of water may be produced as a result of groundworks or construction projects when excavations extend into groundwater sources or collect rainwater and other run-off.

Take care when you dewater, especially in areas that might be, or are known to be, contaminated. The water may contain pollutants, for example toxic heavy metals or silt.

Silt may cause lasting damage to river life because it:

- blocks fish gills so they suffocate and die;
- destroys fish spawning sites;
- destroys insect habitats;
- stunts aquatic plant growth; and
- can build up and lead to flooding.

Action points

	Date completed
• Test any collected water, before you start dewatering, to assess its quality and decide on the best disposal option. Discuss your options with us before you make any discharge.	__ / __ / ____
• If your water contains silt but no other contaminants, it can only be disposed to the environment after it's been treated to remove the silt, for example by pumping to a settlement tank or to soak away over a large grassed area. See 'Working at construction and demolition sites: PPG 6'. If there is **any risk** that the silty water is contaminated with any other pollutant, you should consult us before you dispose of it. More information is given in our publication 'Works and maintenance in and near water: PPG 5'.	__ / __ / ____
• See our guidance notes 'Working at construction and demolition sites: PPG 6' and 'Dewatering underground ducts and chambers: PPG 20' to help you find the best option for dewatering your site.	__ / __ / ____

6. Protecting groundwater

You can't see groundwater, but it's important you don't forget about it. Make sure you protect it from pollution.

Spills and careless or illegal disposal of oils, solvents, chemicals or waste materials cause serious damage to groundwater. Discharging effluent to open ground and on other porous surfaces or from drainage systems that soak into the ground (soakaways) can cause pollution. You **must** avoid polluting groundwater. Once it has become contaminated, it's very difficult and expensive to clean up.

Find out if your site is in a sensitive groundwater area (for example, within the catchment of a drinking-water supply borehole). You may have to take extra measures to prevent pollution to reduce the risk of polluting groundwater.

Codes of practice made under the former Groundwater Regulations, but still current, on high-risk activities such as storing fuel underground, using solvents and non-mains drainage, are available (see section 8, More information).

We have powers that mean you must take action to improve storage, handling, use or disposal of certain dangerous substances (for example hydrocarbons, solvents, biocides, metals and ammonia) that can contaminate groundwater. The Environmental Permitting Regulations mean you **must** have a permit from us before you discharge any waste that contains these and other polluting substances directly or indirectly to groundwater. You can get advice on this from your local office.

Action points

	Date completed
• Check the 'What's in your backyard?' section on our website to see if your site is in a sensitive groundwater area. Look for groundwater in the interactive maps. You may need to put more careful management procedures in place. Ask us for advice.	__ / __ / ____
• Ask us for advice to make sure how you store and dispose of chemicals or waste is legal and follows good practice.	__ / __ / ____
• You **must** make sure you allow only clean uncontaminated rainwater to discharge to soakaways.	__ / __ / ____
• Make sure your management procedures never allow pollutants, for example wastes, oils or chemicals, to be disposed of onto the ground.	__ / __ / ____
• Make sure your incident-response plan includes protection for groundwater, for example, removing and disposing of any contaminated soil. You might need specialist advice about action you should take to deal with spills of certain substances.	__ / __ / ____

7 Training, emergency planning and response

Effective emergency response comes from good planning and training. This plays a crucial role in protecting the environment. Trained and knowledgeable staff can help prevent or reduce the effects of a pollution incident – saving both money and time.

Training should cover environmental awareness, correct procedures and how to respond to a pollution incident. Use the 'Pollution prevention pays' DVD to help train your staff and display the posters available with this pack where everyone can see them.

7.1 Training

Action points

Date completed

- Make sure you have a written training plan that includes:
  - environmental awareness for all staff and contractors as everyone should know how important it is to protect the environment and what your company does to prevent pollution; __ / __ / ____
  - specific training for people, and their deputies, who have responsibility for: __ / __ / ____
    - deliveries and handling materials;
    - checking and maintaining storage areas;
    - plant operations;
    - drainage systems; and
    - pollution-control systems and pollution incident response.

  Staff should understand how to use pollution-control equipment and the potential for harm to personnel and the environment from the materials and equipment they are responsible for. You should use:
  - refresher training to keep everyone up to date; __ / __ / ____
  - incident response actions; and __ / __ / ____
  - regular review and updates of this plan. __ / __ / ____
- Use any actual or potential incident as an opportunity to reinforce the training and improve your incident plan. __ / __ / ____

7.2 Emergencies

Occasional accidents are inevitable so you should have plans to deal with pollution emergencies and make sure everyone knows what to do if there's an incident.

Tell us, as soon as possible, about any accident or spill that could affect the environment. Phone free on 0800 80 70 60, 24 hours a day, seven days a week. This includes:

- incidents that you don't know how to deal with;
- incidents you aren't able to deal with;
- if a spill reaches your surface-water drains or soaks into the ground;
- if a spill runs over hard surfaces, for example tarmac or slabs, and leaves your site or flows into surface waters; and
- if you have a fire and you need to call the Fire and Rescue Service.

If you need emergency help during an incident, you should also dial 999.

Make sure everyone knows that their own health and safety comes first. Nobody should try to control an incident if they would put themselves in danger by doing so.

Action points

Date completed

- Develop a pollution-incident response plan to prevent harm to human health and reduce damage to the environment and environmentally sensitive sites, for example nature reserves and wildlife sites. You can find more guidance and a template in our ‘Incident response planning: PPG 21’ guidance. __ / __ / ____
- You should have a stock of pollution-control equipment to deal with spills, accidents or firewater (the dirty water created when water or foam is used to put a fire out), for example drain covers, sorbent materials, incident spill kits and grab packs. Don’t forget to provide personal protective clothing. You can find more information in our ‘Dealing with spills: PPG 22’ and ‘Managing firewater and major spillages: PPG 18’ guidance notes. __ / __ / ____
- Test your incident response plan by carrying out simulations and exercises for all those involved. Review what happened and update your plan to make it work better. __ / __ / ____
- Make someone responsible for checking and maintaining routine and emergency pollution control and prevention equipment, devices and procedures. Make sure any remedial work is carried out as soon as possible. __ / __ / ____
- Put together procedures to recover, handle and legally dispose of all waste material that arises from incidents or emergencies. Make sure all residues and contaminated materials are disposed of correctly. See section 4, Waste management and our guidance ‘Oil clean-up products and their application in England and Wales’. __ / __ / ____

Pollution facts

Most pollution incidents are the result of ignorance, not being bothered or neglecting basic procedures.

Just 250 grams of pesticide could be enough to exceed the permitted limit in the whole of London’s water supply for one day.

Just one litre of solvent is enough to contaminate 100,000,000 litres of drinking water (that’s equivalent to approximately 50 Olympic-sized swimming pools).

8 More information

We publish free pollution-prevention literature. The following are particularly relevant.

Pollution prevention guidance notes:

Introducing pollution prevention: PPG 1

Above ground oil storage tanks: PPG 2

The use and design of oil separators in surface water drainage systems: PPG 3

Working at demolition and construction sites: PPG 6

Vehicle washing and cleaning: PPG 13

Managing firewater and major spillages: PPG 18

Dewatering underground ducts and chambers: PPG 20

Incident response planning: PPG 21

Dealing with spills: PPG 22

Drums and intermediate bulk containers: PPG 26

Underground storage tanks: PPG 27

Other guidance

Keep your oil safe – Control of pollution (Oil Storage) (England) Regulations 2001

Get to know your oil tank

Groundwater Protection: Principles and Practice (GP3)

You can find these publications on our websites, together with other relevant information – see our contact details or phone the general enquiry line on 03708 506 506.

Defra groundwater protection codes of practice:

Petrol stations and other fuel dispensing facilities involving underground storage tanks
Solvent use and storage
Use and disposal of sheep dip compounds

Useful websites

Connect right – gives information to help you check if you have wrong connections at your home or business. www.connectright.org.uk/

The Carbon Trust – a not-for-profit company who provide specialist support to help business and the public sector boost business returns by cutting carbon emissions, saving energy and making low-carbon technologies commercially viable. www.carbontrust.co.uk/Pages/Default.aspx

The Energy Saving Trust – the UK's leading impartial organisation helping people to save energy and reduce carbon emissions. www.energysavingtrust.org.uk/

You can get information on reducing waste from:

- Wrap: www.wrap.org.uk/ (Phone: **0808 100 2040**)

Defra publications

Department for the Environment, Food and Rural Affairs (Defra) publications (phone 08459 556000)

Guidance Note for the Control of Pollution (Oil Storage) (England) Regulations 2001 Product code PB5765

Groundwater Protection Code for Petrol Stations and Other Fuel Dispensing Facilities Involving Underground Storage Tank 2001

Groundwater Protection Code for the Use of Solvents

How to contact us

We welcome any questions or comments about this guidance, or suggestions about how we could improve it. Please email us at pollution.prevention@environment-agency.gov.uk, phone us on 03708 506 506 or write to us at:
Environment Agency
99 Parkway Avenue
Sheffield
S9 4WG.

This guidance is next due to be reviewed by October 2017.

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Incident hotline
0800 80 70 60 (24 hrs)

Floodline
0845 988 1188

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