

General guide to the prevention of water pollution

SEPA is collaborating with the Environment Agency and the Environment and Heritage Service in Northern Ireland in the production of a range of Pollution Prevention Guidance Notes (PPGs). Here we have reproduced details of the first PPG relating to the prevention of water pollution.

Introduction

Businesses and individuals are responsible for complying with environmental regulations and for preventing pollution of air, land and water. Many thousands of pollution incidents occur each year, originating from factories, farms, transport activities and even homes. Each incident is an offence and can result in prosecution as well as environmental damage. However, most cases are avoidable, given careful planning of operations, responsible waste management and suitable facilities to reduce the risk of spillage - along with simple precautions to deal with any spillages, in case they occur. Responsible waste management can ensure that you comply with the relevant regulations, while minimising waste can reduce the amount of waste produced, which in turn cuts the risk of environmental damage and the costs of waste disposal. There are a series of Pollution Prevention Guidance notes (known as PPGs), which provide practical advice to help you avoid causing pollution, minimise waste and comply with the requirements of the law. For a full list of the PPG's visit the SEPA website at www.sepa.org.uk. Often the necessary measures cost little, especially if you think about them early on, for example at the design stage, and can save you money, too. In contrast, the fines for failing to comply with the relevant regulations or the costs of cleaning up pollution (which are recovered from the polluter wherever possible) can be very high. Each of the guidance notes either covers a topic of relevance to many sectors, such as oil storage or the use of pressure washers, or are specific to a particular type of site, such as schools, vehicle-servicing garages or hospitals.

Legal framework

The environment regulation agencies are responsible for protecting "controlled waters" from pollution, for preventing waste management from polluting the environment, causing harm to human health and detriment to local amenity and for regulating radioactive substances (except in Northern Ireland). "Controlled waters" include all watercourses, lakes, lochs, canals, coastal waters and water contained in underground strata (or "groundwater"), and it is an offence to pollute such waters - deliberately or accidentally. In addition, the formal consent of the Agency is required for many discharges to controlled waters, including direct discharges and discharges to soakaways. Such consents are granted subject to conditions, and are not issued automatically. Any other waste produced on a site will be subject to the Duty of Care and may also be subject to control under the Waste Management Licensing Regulations 1994. In addition, certain wastes are defined as "Special Wastes" and are subject to more rigorous controls. Advice is available from the Agencies. The Agencies are also responsible for implementing the legislation on packaging, which affects companies with an annual turnover above £2 million and handling more than 50 tonnes of packaging per year. All discharges to the foul sewer require authorisation by the sewerage undertaker and may be subject to the terms and conditions of a trade effluent consent.

Site Drainage

a. **Drainage** - Most existing sites will have two types of drain. Surface water drains, including land drains and most road drains, should carry only uncontaminated rainwater, as they will lead to a local river, stream or soakaway. The foul water drain is designed to carry contaminated waste water safely to a storage lagoon, treatment system or sewage works for treatment. In the case of an isolated house, or a small community biological treatment plant, care should be taken not to overload this by disposing of disinfectant or grease down the foul drain. Prior agreement from the local sewerage undertaker is required before you connect to the public foul water system. Where significant work is being undertaken on an existing site or a new development, the Agencies encourage the consideration of an alternative approach for surface drainage, which uses a combination of techniques known collectively as Sustainable Drainage Systems (SuDS). This approach has significant environmental benefits and may also have lower installation costs.

b. **Surface water treatment** - Surface water can be contaminated with silt, heavy metals, chemicals and oil, which can be damaging in watercourses and groundwater. In many cases, it will require treatment by controlling the pollution at its source or just before the discharge point. SuDS may provide a suitable solution. In areas where there is a high risk of oil pollution, it may be necessary to install an oil separator to protect the surface water system and reduce the risk of pollution.

c. **Wrong connections** - Wrongly connected effluents can cause severe pollution problems, which can be difficult to remedy. Sources of dirty water, such as sinks and toilets, should be connected to the foul sewer and the nearest drain. Manhole covers and gullies should be clearly marked, by colour coding, with red for foul and blue for surface water, and site drainage plans should be readily accessible.

d. **Garage forecourts and fuel delivery areas** - Because of the potential for pollution from these areas, oil separation is required. Effluent resulting from the cleaning of forecourts must not be discharged to surface water drains, watercourses or soakaways.

e. **Cleaning activities** - Wash waters from mobile pressure washers should not be discharged to surface water drains, watercourses or soakaways. Even if described as bio-degradable, detergents are not suitable for discharge to surface drains, so such activities should be carried out in designated areas draining to the foul sewer (subject to the approval of the local sewerage undertaker). Alternatively, closed loop vehicle wash recycling systems are available.

f. **Sewage disposal** - All foul sewage should pass to the local foul sewer if possible. If not, other arrangements should be discussed with your local Agency office. Most alternatives will normally require the formal consent of the Agency.

g. **Chemical storage areas** - Drainage from such areas presents special problems and you should consult fully with your local Agency office to minimise the pollution risks.

Waste storage and disposal

- a. **Reduce, re-use and recycle** - Methods to reduce the amount of waste generated in the first place, together with the re-use and recycling of wastes, must be considered. There is scope for significant savings, as the costs of raw materials and waste disposal continue to rise.
- b. **Duty of Care and waste legislation** - To prevent fly-tipping, producers of waste must ensure that it remains under their control and is passed on only to a registered waste carrier and is accompanied by a full description. Some wastes, such as used mineral oil, are subject to the Special Waste Regulations, which impose additional controls on movement and disposal.
- c. **Storage** - All wastes must be stored in designated areas that are isolated from surface drains and banded to contain any spillages. Rubbish compactors should be covered to prevent the build-up of contaminated rainwater and drained to the foul sewer to prevent polluting liquid entering the surface water drains. Compactor hydraulics should be maintained in good order.

Deliveries and security

- a. **Deliveries** - Special care should be taken during deliveries, particularly when hazardous materials are involved. Deliveries should be supervised at all times, tanks and containers should be labelled with the nature and volume of their contents, and the levels should be checked before delivery to prevent overfilling.
- b. **Delivery areas** - Where possible, loading and unloading areas should be roofed and drained to the foul sewer. If not, they should be clearly marked and isolated from the surface water drainage system, either by catch-pits or sumps with isolating valves. Cut-off valves in the drainage system and raised kerb surrounds may be needed. Delivery pipes should be fitted with automatic cut-off valves to prevent overfilling.
- c. **Security** - Vandalism and theft are frequent causes of pollution. Lockable valves should be fitted on all storage tanks, fences should be secure, and doors and gates kept locked. Where possible, materials should be stored under cover and potential pollutants should be transferred into safe storage without delay.

Oil storage and pipelines

The storage of oil at industrial, commercial, institutional and institutional residential premises in England is to be the subject of new regulations due to be introduced in late 2000. Similar regulations for Wales and Scotland are under consideration. These will introduce statutory minimum storage standards. PPG2 - Reference 10 covers above ground oil storage, with the key points listed below;

- a. **Storage** - Any oil storage tank and oil stored in drums should be sited on an impervious base within an oil-tight bund with no drainage outlet. All fill pipes, draw pipes and sight gauges should be enclosed within the bund, and the tank vent pipe should be directed downwards into it.
- b. **Pipelines** - Site pipelines in an accessible position above the ground where possible, as underground tanks and pipelines may be subject to damage and corrosion. Where a pipeline has to be laid underground, it should be corrosion resistant and placed in a protective sleeve or a duct with open grating covers for inspection purposes, and should be tested regularly. Underground pipeline connections should be minimised and, where used, should have access points for inspection. Underground tanks and pipelines may be subject to special restrictions where there is a risk to groundwaters.



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Contingency plans

Spillages and run-off water from fire-fighting may have the potential to cause enormous damage to controlled waters. It is recommended that appropriate spill kits or absorbent materials are held on site. It is essential that staff know what to do in an emergency. An up-to-date drainage plan should be maintained, hazards identified and a contingency plan drawn up, giving advice on what action to take and who to inform. These plans should be displayed clearly and regular exercises undertaken.

Construction and demolition

Detailed guidance is available on construction and demolition (PPG6 - Reference 16). It is important to note that the prior approval of the Agency must be obtained where site de-watering might result in a discharge to controlled waters. Any discharge must be free from solids in suspension, oil or other polluting materials. Silt is a non-toxic pollutant and, in the absence of other contaminants, silty water may be disposed of by pumping to the foul sewer, a settlement tank or over a grassed area. However, if any other contaminant is present, you should consult the Agency on its disposal.

Agriculture

Agricultural activities have resulted in significant water pollution in the past, and continue to have the potential to cause such damage unless properly managed. Detailed guidance on preventing pollution from agricultural activities is available. Please consult the Codes of Good Agricultural Practice for the Protection of Water, Soil and Air: MAFF Publications, Telephone: 0645 556000.

Groundwater pollution

Spillage, incorrect storage of chemicals or waste materials or unsuitable disposal activities can result in pollutants seeping through the soil, causing serious harm to groundwater – which is a vital source of drinking water. Chlorinated solvents are the most widespread and severe cause of groundwater pollution, and handling them requires special care. The Agencies have strong powers to take action relating to the storage, handling, use or disposal of certain dangerous substances posing a risk of contaminating groundwaters. The prior authorisation of the Agency is required before you dispose of wastes containing certain dangerous substances into or onto land, and advice on this is available from your local Agency office.

For further information on the prevention of water pollution or any of the other PPG's please visit www.sepa.org.uk or contact EPM Solutions who will be happy to assist you.