

WORKING AT CONSTRUCTION AND DEMOLITION SITES: PPG6

POLLUTION PREVENTION GUIDELINES

These guidelines are intended to assist those in the construction and demolition industry with responsibility for managing the environmental impact of their activities. Compliance with these should minimise the effect of the work on the environment. The guidelines are jointly produced by the Environment Agency for England and Wales, the Scottish Environment Protection Agency and the Environment and Heritage Service in Northern Ireland, referred to as the Agency or Agencies. Sites are considered according to individual circumstances and early consultation with your local Agency office is advisable. Contact details will be found at the end of these guidelines.

1. LEGAL FRAMEWORK

- a. The Agencies are responsible for both the protection of “controlled waters” from pollution and for the prevention of pollution of the environment, harm to human health and detriment to local amenity by waste management activities under the Environmental Protection Act 1990.

“Controlled waters” include all watercourses, lakes, locks, coastal waters and water contained in underground strata (or “groundwater”) and it is an offence to pollute such waters, either deliberately or accidentally. In addition, the formal consent of the Agency is required for many discharges to controlled waters, including both direct discharges and discharges to soakaways. Such consents are granted subject to conditions and are not granted automatically.

- b. All discharges to the public foul sewer require authorization by the sewerage undertaker and may be subject to the terms and conditions of a trade effluent consent.
- c. Any other waste produced on a construction site will be subject to the Duty of Care (Reference 1) under the Environmental Protection Act 1990 and may also be subject to control under the Waste Management Licensing Regulations 1994. In addition certain hazardous wastes are subject to the Special Waste Regulations 1996. Separate legislation applies in Northern Ireland. Advice is available from the Agencies.

2. INTRODUCTION

Most pollution incidents are avoidable. Careful planning can reduce the risk of pollution. Most of the measures needed to prevent pollution cost very little, especially if they are included at the planning stage. In contrast, the costs of cleaning up a pollution incident can be very high. Moreover, pollution prevention and waste minimisation measures may offer substantial economic benefits. These include reducing the need for expensive raw materials, fewer site accidents and a reduced risk of prosecution for environmental offences. Introduction of pollution prevention measures is the first step, but for these to be effective, managers must be committed and employees must understand why they are needed and be suitably trained. Further guidance on the control of water pollution from construction sites (Reference 2) and a video for use in training sessions is available (Reference 3).

Where a watercourse runs through or adjacent to a site, extra care will be needed, for example to prevent waste from the site being deposited in the watercourse. Additional guidance for such sites is available from the Agencies (PPG5 - Reference 4).

3. PLANNING AND PREPARATION

- a. In planning and carrying out any works, precautions must be taken to ensure the complete protection of watercourses and groundwater against pollution. These should include an investigation of past use of the site to ensure that the operations will not disturb contaminated land and a survey of the siting and contents of all storage tanks and pipelines. The Industry profiles published by DETR (Reference 5) will assist in identifying potential contamination and ways to reduce their impact, based on former industrial uses of the site. If there is any contaminated land on site, the Local Authority and local Agency officer should be consulted on its remediation or disposal.

- b. Any underground services on the site should be identified and clearly marked before demolition or construction work begins and precautions taken to prevent damage to them. Old storage tanks should be checked and safely emptied before they are moved.
- c. Arrange a site meeting with the local Agency officer before work commences. The advice given both before work starts and during the operations may prevent serious problems arising.
- d. Vandalism and theft are common causes of pollution. Sites should be adequately protected by secure fences and locked access where possible.

4. SITE DRAINAGE

In developed areas it is likely that there will be two types of drainage from a site. It is recommended that manholes on site are colour coded, for example using blue for surface water and red for foul.

a. Surface Water

The surface water drain is designed to carry uncontaminated rainwater directly to a local stream, river or soakaway. In some cases this may be some distance from the site. Nothing which could cause pollution, including silty water, should enter the surface water drains.

b. Foul Water

The foul water drain carries contaminated water to a sewage works for treatment before discharge to a watercourse or soakaway. It may be possible to pump dirty water to a foul sewer, provided the approval of the water undertaker has been received. Where no foul sewer is available, alternative arrangements will be necessary for sewage disposal. See PPG4 - Reference 6.

5. DELIVERIES

Special care should be taken during deliveries, especially when fuels and hazardous materials are being handled. Ensure that all deliveries are supervised by a responsible person, that storage tank levels are checked before delivery to prevent overfilling and that the product is delivered to the correct tank. Put in place a contingency plan and suitable materials to deal with any incident. Ensure that employees know what to do in the event of a spillage. If properly dealt with, a spillage need not result in pollution.

6. STORAGE

Many of the materials used in construction operations, such as oil, chemicals, cement, lime, cleaning materials and paint have the potential to cause serious pollution.

a. Fuels, oils and chemicals

All fuel, oil and chemical storage must be sited on an impervious base within a bund and secured. The base and bund walls must be impermeable to the material stored and of an adequate capacity. Detailed guidelines concerning above ground oil storage tanks are available (PPG2 - Reference 7). Storage at or above roof level should be avoided.

Leaking or empty oil drums must be removed from the site immediately and disposed of via a licensed waste disposal contractor.

b. Security

All valves and trigger guns should be protected from vandalism and unauthorised interference and should be turned off and securely locked when not in use. Any tanks or drums should be stored in a secure container or compound, which should be kept locked when not in use. Bowsers should be stored within site security compounds when not in use.

c. Marking

The contents of any tank should be clearly marked on the tank, and a notice displayed requiring that valves and trigger guns be locked when not in use.

d. Removal

Before any tank is moved or perforated at the end of a contract or particularly during demolition works, all contents and residues must be emptied by a competent operator (see 7c) for safe disposal. Pipes may contain significant quantities of oil or chemicals, and should be carefully drained and then capped, or valves closed, to prevent spillage.

7. WASTE MANAGEMENT

The correct handling, storage and disposal of waste materials is vital if environmental harm and public complaint are to be avoided. Schemes which aim to minimise waste and increase recycling are not only beneficial to the environment but can also reduce costs. The Duty of Care (Reference 1) requires waste producers to ensure that waste does not escape from their control and is passed only to an authorised person accompanied by a full written description.

Consider how noise and dust emissions can be minimised and do not burn waste on site, as this will cause both pollution and annoyance to neighbours.

a. Waste minimisation

Waste disposal is increasingly costly. Waste minimisation involves reducing the volume of waste produced, reusing the material again (without reprocessing) or recycling (which involves an element of reprocessing). All of these can bring benefits to the environment and significant savings in terms of management time, wasted materials, transport and disposal charges and landfill tax. Further details on waste minimisation for the construction industry will be found in References 8 & 9. Note that concrete crushing plant may require authorisation from the local authority.

b. Waste treatment and storage

All wastes must be stored in designated areas which are isolated from surface drains. Under some circumstances, for example if storing or treating material from a contaminated site, a waste management licence may be required. Skips should be covered to prevent dust and litter being blown out and rainwater accumulation and should be regularly inspected and replaced when full. Where possible, separate skips should be provided so that wastes can be segregated for recycling or to prevent cross contamination. Used chemical containers may need special handling and the manufacturer's instructions should be followed. If plant maintenance is carried out on site, used oil should be stored in a bunded area for collection. Oil and fuel filters should also be stored in a designated bin in a bunded area for separate collection and recycling (PPG8 - Reference 10). Used oil and filters are "special waste" - see 7c.

c. Waste disposal

Under the Duty of Care, the waste producer has a duty to ensure that the waste contractor who removes the waste is registered with the Agency. A written description of the waste must be given to the contractor. Certain hazardous wastes are defined as being "special wastes" and a more rigorous consignment note system applies. If there is any doubt, contact the Agency for advice.

8. SILT

Water containing silt should never be pumped directly into a river, stream or surface water drain. Silty water can arise from excavations, exposed ground, stockpiles, plant and wheel washing and site roads.

a. Excavations

Where possible prevent water from entering excavations. Use cut-off ditches to prevent entry of surface water and well point dewatering or cut-off walls for ground water. Use the corner of the excavation as a pump sump and avoid disturbing that corner. Do not allow personnel or plant to disturb water in the excavation.

b. Exposed ground and stockpiles

Minimise the amount of exposed ground and stockpiles. Stockpiles can be seeded or covered and silt fences constructed from a suitable geotextile may be useful.

c. Plant and wheel washing

Wheel washes and plant washing facilities should be securely constructed with no overflow and the effluent should be contained for proper treatment and disposal. A detailed guidance note on the use of pressure washers is available (PPG13 - Reference 11).

d. Site roads

These should be regularly brushed or scraped and kept free from dust and mud deposits. In dry weather dust suppression measures may be required.

e. Dealing with silty water

Always ensure that adequate provision for dealing with silty water is included in the site working plan. All discharges off the site will require approval. Where possible discharge to the foul sewer (see section 4b). Discharges to streams, watercourses or soakaways must have the approval of the Agency, which should be obtained well in advance. (A discharge consent can take up to four months to obtain, or even longer for difficult cases). Suitable treatment will be required, which could involve the use of a settlement lagoon or tank or a grassed area.

9. REFUELLING

The risk of spilling of fuel is at its greatest during refuelling of plant. Where possible, refuel mobile plant in a designated area, preferably on an impermeable surface and away from any drains or watercourses. Keep a spill kit available. Never leave a vehicle unattended during refuelling or jam open a delivery valve. Check hoses and valves regularly for signs of wear and ensure that they are turned off and securely locked when not in use. Diesel pumps and similar equipment should be placed on drip trays to collect minor spillages. These should be checked regularly and any accumulated oil removed for disposal.

10. CONCRETE

Concrete is highly alkaline and corrosive and can have a devastating impact on watercourses. It is essential to take particular care with all works involving concrete and cement especially if working near a river, stream or surface water drain. Suitable provision should be made for the washing out of concrete mixing plant or ready mix concrete lorries. Such washings must not be allowed to flow into any drain or watercourse.

11. EMERGENCIES

In the event of a spillage on site, the material should be contained (using an absorbent material such as sand or soil or commercially available booms) and the Agency notified immediately using the emergency hotline number listed at the end of this guidance.

12. REFERENCES

1. Waste Management- The Duty of Care - A code of practice (revised 1996). ISBN 0-11-753210-X: The Stationery Office: Telephone 08706 005522
2. "Building a cleaner future" training video pack: CIRIA/Environment Agency Price £50. To order, telephone 08487 337700
3. Control of pollution from construction sites: C532
4. PPG5: Working in or near rivers
5. DETR Industry Profiles: DETR Publications Sales Centre, Telephone 01709 891318
6. PPG4: Disposal of sewage where no mains drainage is available
7. PPG2: Above ground oil storage tanks
8. Waste Minimisation and Recycling in Construction - A site handbook: SP133
9. Managing materials and components on site: SP146
References 3, 8 and 9 are published by CIRIA (Construction Industry Research and Information Association) Telephone 020 7222 8891
10. PPG8: Safe storage and disposal of used oils
11. PPG13: High pressure water and steam cleaners
References 3,5,6,9 & 10 are available free of charge, from the Agencies

All the Agencies' pollution prevention guidance notes are available on the web sites listed below.

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The 24-hour emergency hotline number for reporting all environmental incidents relating to air, land and water in England, Wales, Scotland and Northern Ireland.

EMERGENCY HOTLINE

0800 80 70 60



ENVIRONMENT AGENCY

