



PREVENTING POLLUTION ON INDUSTRIAL SITES: PPG11

POLLUTION PREVENTION GUIDELINES

These notes are for guidance only. They are produced by the Environment Agency in 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 the individual circumstances and contact with your local Agency office is advisable. Contact details will be found at the end of these guidelines.

Note that in these guidelines the term 'oil separator' is used. This has the same meaning as 'oil interceptor'.

1. LEGAL FRAMEWORK

- a. The Agencies are responsible for the protection of "controlled waters" from pollution, for the prevention of pollution of the environment and harm to human health by waste management activities under the Environmental Protection Act 1990 and for the regulation of radioactive substances under the Radioactive Substances Act 1993 (except in Northern Ireland, where different legislation applies).

"Controlled waters" include all watercourses, canals and water contained in underground strata (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 issued automatically.

- b. Discharges to the public foul sewer require authorisation by the sewerage undertaker and may be subject to the terms and conditions of a trade effluent consent. Where reference is made to disposal to sewer, this should always be subject to such approval.
- c. Any other waste produced on the 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 (Reference 2). Separate legislation applies in Northern Ireland. Advice is available from the Agencies.
- d. The storage, use and disposal of radioactive substances normally needs a licence from the Agency.

2. INTRODUCTION

Most pollution incidents are avoidable. Careful planning of facilities and operational procedures can reduce the risk of spillage and simple precautions can prevent a spillage becoming a pollution incident. Most of the measures needed to prevent pollution cost very little, especially if they are included at the design stage. In contrast, the costs of cleaning up a pollution incident and compensating fisheries owners and other downstream users can be very high. Pollution prevention measures may also offer substantial economic benefits, including saving expensive raw materials and products, minimise the frequency of site accidents, and reduce the risk of prosecution for water pollution offences. Introduction of pollution prevention measures is the first step, but to be effective, employees must understand why they are needed and be trained in their use.

3. SITE DRAINAGE

On most sites there will be two types of drain:

- i. Surface water drains should carry only uncontaminated rainwater from roofs and clean yard areas to a watercourse or soakaway. Under some circumstances, treatment may be required before discharge (see Section 5(a)).
- ii. Foul drains should carry contaminated water, trade effluent and domestic sewage to a treatment works.

Wrongly connected effluents can cause severe pollution problems, which are often costly to remedy. Ensure that new or temporary facilities, such as sinks, showers, canteens, laboratories and washdown areas, are properly connected to the foul drain and not just the nearest drain, which might be the surface water system. Internal floor gullies, if provided, are readily contaminated and must be connected to the foul drain.

All drainage systems should be maintained in working order. A programme of regular inspections should be established and gullies and sumps should be cleaned as required by suitably registered contractors.

A frequently occurring factor in pollution incidents is a lack of awareness of the purpose of drains and gullies. Therefore, it is recommended that gullies, grids and manhole covers are colour coded to aid identification, using blue for surface water and red for foul. Use notices where appropriate and keep a set of up-to-date drainage plans on site.

4. SEWAGE AND WASTE WATER DISPOSAL

a. Domestic sewage

Care should be taken that all drainage from welfare facilities such as toilets, showers and canteens is connected to the foul drainage system. Such connections may require approval from the sewerage undertaker.

b. Trade effluent

In addition to process effluent, trade effluent also includes compressor or boiler blowdown, steam condensates, cooling water, pressure testing liquids, air conditioning water and vehicle and plant cleaning effluent. Before making a discharge, the alternatives should be considered carefully, including recycling, minimisation and reuse on site. All such discharges require prior consent either from the local sewerage undertaker for discharges to the foul sewer, or from the Agency for discharges to watercourse or groundwater. Both of these consents will incur charges and you will be responsible for complying with the terms of the consent. Failure to do so may result in prosecution. You should ensure that:

- i. Responsibility for the discharge is clearly defined.
- ii. The effluent discharge point is clearly marked.
- iii. The sampling point is safe and accessible at all times.
- iv. Regular visual inspections are made, samples taken and tests carried out if appropriate.

5. SURFACE WATER DRAINAGE

Surface water drainage discharges to a watercourse or to groundwater via a soakaway. Surface water must therefore be clean and uncontaminated. A discharge of waste water to the surface water drain will result in pollution.

a. Treatment of surface water drainage

Large car parks, access roads and hard surfaced areas can give rise to pollution due to oil drips from vehicles and the accumulation of dust and litter. The run-off from such areas may require treatment before discharge. The Agencies have published guidance on surface water disposal (Reference 3), which describes options for treatment. These range from permeable surfaces and infiltration trenches, offering control at source, to end of pipe systems, such as swales and constructed wetlands. They are collectively known as "Sustainable Urban Drainage Systems".

b. Oil separators

Where it is not possible to use sustainable drainage techniques, an oil separator may be required on the drainage from large parking areas or from the area immediately around above ground oil storage tanks, depending on the risk of contamination or spillage.

Guidelines for the selection and installation of oil separators are available (PPG3-Reference 4). Oil separators need regular inspection and must be emptied when required, by a suitably registered contractor, in order to function effectively.

c. Consent to discharge

Should surface water drainage become contaminated, a consent to discharge will generally be required. However, if the guidance in this document is followed, and potential sources of contamination are isolated from the surface water systems, a discharge consent will not usually be required.

d. Cut-off valves

A cut-off valve on the drainage system provides improved security if used to isolate designated risk areas, for example during the delivery of hazardous chemicals or for areas regularly cleaned using chemicals. In some cases, these are used with off-line storage tanks. Their use ensures that a spillage can be retained on site for suitable treatment and disposal. Contaminated 'fire water' could also be contained in the event of a fire.

e. Roof water down pipes

Uncontaminated roof water should be discharged directly to the surface water system via direct drain points or sealed top, side entry gullies. Open gullies or grates should be avoided, as they provide an entry route for contamination. Roof drainage should not normally pass through any oil separator.

6. DELIVERY AND HANDLING OF MATERIALS

The handling of materials always involves a risk of spillages and accidents. It is therefore important to identify these risks so they can be minimised.

- a. Loading and unloading areas should be designated, marked and isolated from the surface water drainage system.
- b. The routes used for the movement of materials on site should be identified so that any necessary protection can be incorporated.
- c. Yard areas used for storage, handling and manufacturing should be roofed to reduce the volume of contaminated drainage for disposal and drained to the foul sewer.
- d. High risk areas, such as refuelling points should be isolated from the surface water system using ramps, roll-over bunds or stepped access.
- e. Deliveries of oil and potentially hazardous materials should be supervised. If there is a spill, it should be contained and reported immediately. **DO NOT HOSE IT DOWN.**
- f. Tankers should discharge via a lockable fixed coupling within the bunded area.
- g. Automatic cut-off valves should be fitted to delivery pipes to prevent overfilling.
- h. Where possible, pipelines should be sited above ground. If a pipeline is to be installed underground, it should be placed in a leak-tight protective sleeve or duct and subject to regular inspection and testing. Pipeline ducts should not be connected to the surface water drainage system.

7. STORAGE FACILITIES

- a. Underground storage tanks are susceptible to damage and corrosion, and above ground facilities are preferred. In areas of high groundwater vulnerability (References 5 and 6) the Agency may object to the installation of underground storage tanks. Where underground storage is necessary, protective measures such as double skinned tanks and piping and leak detection may be required. In some circumstances, underground tanks may be fitted within a basement style bund.
- b. All above ground storage tanks, drums and containers should be sited on an impermeable base within a bund. The bund should be constructed of a material impermeable to the liquid stored. For guidance on above ground oil storage, see PPG2-Reference 7. Storage at or above roof level should be avoided.

- c. Always use appropriately sized and constructed tanks or containers that will not leak or corrode, ensuring that they are clearly labelled with their contents and volume.
- d. Drums and other liquid containers should be provided with drip trays when in use.

8. WASTE MANAGEMENT

Waste management is a complex area of legislation. This section provides a brief outline of the principal issues, but you are advised to contact your local Agency office for site specific guidance and advice.

a. Reduction, re-use and recycling

Methods to reduce the amount of wastes, such as re-use and recycling, should be considered. Significant savings may be made as material and waste disposal costs continue to rise (PPG8-Reference 8).

b. Duty of Care and waste legislation

Under the Environmental Protection Act 1990, producers of waste have a Duty of Care to ensure that it is properly managed. Waste must be securely stored on site and the producer has a duty to ensure that the waste contractor who removes it is registered with the Agency and is informed of its nature. The burning of waste and on-site disposal are both subject to the Waste Management Licensing Regulations.

c. Storage

If waste cannot be eliminated, it must be stored and disposed of appropriately, which may, under some circumstances, require a licence from the Agency. Litter is polluting and must not be allowed to escape. Skips and containers should not be overfilled and should be covered, or waste storage areas enclosed, to prevent waste being blown out.

d. Swarf skips and compactors

Swarf skips and refuse compactors often leak polluting liquids. They should be placed on an impermeable base and isolated from the surface water drainage system, using a spill tray, raised kerbs or "roll-over" bunds. It is preferable to cover them, to avoid rainwater accumulation, and to connect the drainage to the foul sewer. Any leakage should be cleaned up straight away using sand or absorbent material. Compactors are exempt from the need for a waste management licence, but must be registered with the Agency.

e. Packaging regulation

If a company handles more than 50 tonnes of packaging per year, and has an annual turnover in excess of £5 million, (£1 million from April 2000), it may be required to register with the Agency or a compliance scheme to ensure that the recovery and recycling obligations of the Producer Responsibility Obligations (Packaging Waste) Regulations 1997 are met.

f. Liquid wastes

Liquid wastes, including solvents and oil, must be securely stored in bunded compounds prior to collection by a registered waste contractor (see References 9 & 10). Under no circumstances should any waste liquids be discharged to the surface water system. Some liquid wastes may be discharged to the foul sewer via a designated facility, if an appropriate trade effluent consent is in place (see Section 1b).

g. Special wastes

Certain hazardous wastes including solvents and oils are defined as being "special wastes" and a more rigorous consignment note system applies (see Reference 2).

9. ROUTINE INSPECTION AND MAINTENANCE

A routine programme of inspection and maintenance for oil separators, effluent treatment plants, storage tanks (both above and below ground), pipework, drains, bund walls, notices and any pollution prevention equipment should be established. There should be a clear reporting procedure leading to rapid corrective measures where needed. Where possible, give staff personal responsibility for the maintenance programme.

10. CLEANING AND DEGREASING

All cleaning activities, including the cleaning of equipment, yards, floors, containers and vehicles, can produce large volumes of polluted water. All cleaning agents are potentially polluting, even those claimed by manufacturers to be 'biodegradable' or acceptable for discharge to drains. Water containing detergents, disinfectants, degreasers or any other cleaning agent, including effluent arising from pressure or steam cleaners (see PPG13-Reference 11), must not enter surface water drains or soakaways.

- a. All cleaning and washing operations should be carried out in designated areas isolated from the surface water system and draining to the foul sewer. The area should be clearly marked and use of a kerb surround or "roll-over" bund is recommended. Consideration should be given to water recycling.
- b. Ensure all staff and contractors working on site are aware of the disposal facilities for wash waters by using clear signs. Use notices to identify surface water gullies, indicating clearly that they should not be used for the disposal of waste water.
- c. Yard areas draining to the surface water system should not be degreased or steam cleaned unless:
 - (i) the gullies are sealed off and any liquid soaked up with absorbent material, or
 - (ii) a valve is fitted at the outlet to the system and closed during the cleaning operation. The accumulated washings should then be removed for disposal by a registered waste carrier.

11. DEMOLITION AND CONSTRUCTION

Construction and demolition activities on your site may generate waste and increase the risk of pollution (PPG6-Reference 12). Ensure that old tanks and pipework are empty before they are disturbed and that any temporary chemical and oil storage facilities are bunded. Provision should be made for the treatment of silty water and remember that cement and concrete are harmful to watercourses.

12. STAFF TRAINING

Staff should be made aware of the relevant legislation and of their own responsibilities. Include pollution prevention information in on site staff and contractor training. Use newsletters, posters and notices to reinforce the message. Your local Agency office may be able to assist with training materials and speakers. Key staff should be familiar with the drainage systems, and carry out exercises to rehearse actions in the event of a spillage. They should have access to important telephone numbers such as the Emergency Services, the local water company and the Agency. Encourage staff to identify pollution risks and solutions, perhaps by using a staff suggestion scheme.

13. EMERGENCY PLANS

Carry out a complete inspection of the site to identify potential sources of pollution. Where these can be removed by changing practices, materials or other means, draw up an action plan to deal with them. An inventory of chemicals held should be made and kept up to date and available on site. Prepare contingency plans for all eventualities and locate instruction notices, appropriate equipment and materials (such as shovels, sand, absorbent materials and drain bungs) at accessible key locations. Consider the effect of a major fire and plan how to deal with contaminated fire water (PPG18-Reference 13). Ensure that a named contact is available at all times to deal with emergencies and to liaise with the emergency services and the Agency.

14. SECURITY

Protect your site from vandalism and theft. Many pollution incidents are the result of poor security. Lock gates, doors and valves and make fences secure. Where possible, store materials under cover.

15. REFERENCES

1. Waste Management - The Duty of Care - A code of practice: ISBN 0-11-753210-X
2. Classification of special waste: Information Sheet 1: Environment Agency
Use of the consignment note: Information Sheet 2: Environment Agency
Obtaining and sending consignment notes: Information Sheet 3: Environment Agency
A Guide to the Special Waste Regulations 1996: SEPA
3. A Guide to Sustainable Urban Drainage: SEPA/Environment Agency
4. PPG3: The use and design of oil separators in surface water drainage systems
5. Policy and Practice for the Protection of Groundwater: ISBN 0-11-310145-7
6. Groundwater Protection Strategy for Scotland: SEPA
7. PPG2: Above ground oil storage tanks
8. PPG8: Safe storage and disposal of used oils
9. "Money for nothing, waste tips for free" waste minimisation video: Environment Agency:
Telephone 0345 337700 to order a free copy.
10. Solvent pollution and how to avoid it
11. PPG13: High pressure water and steam cleaners
12. PPG6: Working at demolition and construction sites
13. PPG18: Pollution prevention measures for the control of spillages and fire fighting run-off

References 1 and 5 are available from the Stationery Office, Tel: 020 7873 0011/9090

References 2-4, and 6-13 are available free from the Agencies

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

ENVIRONMENT AGENCY

HEAD OFFICE

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Tel: 01454 624 400 Fax: 01454 624 409
World Wide Web: <http://www.environment-agency.gov.uk>
World Wide Web: <http://www.environment-agency.wales.gov.uk>

REGIONAL OFFICES

ANGLIAN

Kingfisher House
Goldhay Way
Orton Goldhay
Peterborough PE2 5ZR
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MIDLANDS

Sapphire East
550 Streetsbrook Road
Solihull B91 1QT
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NORTH EAST

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NORTH WEST

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WELSH

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Fax: 029 2079 8555

SCOTTISH ENVIRONMENT PROTECTION AGENCY

HEAD OFFICE

Erskine Court
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Tel: 01786 457 700
Fax: 01786 446 885
World Wide Web: <http://www.sepa.org.uk>

REGIONAL OFFICES

NORTH REGION HQ

Graesser House
Fodderty Way
Dingwall Business Park
Dingwall IV15 9XB
Tel: 01349 862 021
Fax: 01349 863 987

WEST REGION HQ

SEPA West
5 Redwood Crescent
Peel Park
East Kilbride G74 5PP
Tel: 01355 574 200
Fax: 01355 574 688

EAST REGION HQ

Clearwater House
Heriot-Watt Research Park
Avenue North
Riccarton
Edinburgh EH14 4AP
Tel: 0131 449 7296
Fax: 0131 449 7277

ENVIRONMENT & HERITAGE SERVICE

Calvert House,
23 Castle Place,
Belfast
BT1 1FY
Tel: 028 9025 4868
Fax: 028 9025 4777

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



ASiantaeth yr
AMGYLCHEDD CYMRU
ENVIRONMENT
AGENCY WALES



ATAL LLYGREDD AR SAFLEOEDD DIWYDIANNOL: PPG11

CANLLAWIAU ATAL LLYGREDD

Canllawiau'n unig yw'r nodiadau hyn. Fe'u cynhyrchwyd ar y cyd gan Asiantaeth yr Amgylchedd dros Gymru a Lloegr, Asiantaeth Diogelu'r Amgylchedd yr Alban (SEPA), a Gwasanaeth Amgylchedd a Threftadaeth Gogledd Iwerddon, y cyfeirir atynt fel yr Asiantaeth(au). Bydd pob safle yn cael ei ystyried yn ôl yr amgylchiadau unigol a chynghorir chi i ymgynghori cyn gynted â phosibl â'ch swyddfa Asiantaeth yr Amgylchedd leol. Rhwir manylion pwyl i gysylltu â hwy ar ddiwedd y canllawiau hyn.

Sylwer bod y term 'gwahanwr olew' yn cael ei ddefnyddio yn y canllawiau hyn am 'oil separator' ac 'oil interceptor'.

1. FFRAMWAITH CYFREITHIOL

- a. Mae'r Asiantaethau yn gyfrifol am warchod "dyfroedd rheoledig" rhag llygredd ac am atal llygredd amgylcheddol a niwed i iechyd dynol drwy arolygu gweithgareddau rheoli gwastraff o dan Ddeddf Diogelu'r Amgylchedd 1990 ac am reoleiddio sylweddau ymbelydrol o dan Ddeddf Sylweddau Ymbelydrol 1998 (ac eithrio yng Ngogledd Iwerddon lle mae deddfwriaeth wahanol mewn grym).

Mae "dyfroedd rheoledig" yn cynnwys pob cwrs dŵr a chamlas a dŵr a geir mewn haenau tanddaear (dŵr daear) ac mae'n drosedd i lygru dyfroedd o'r fath, naill ai'n fwriadol neu'n anfwriadol. Yn ogystal, mae angen cael caniatâd ffurfiol yr Asiantaeth am lawer math o arllwysiad i ddyfroedd rheoledig, gan gynnwys arllwysiadau uniongyrchol ac arllwysiadau i suddfannau (soakaways). Rhaid bodloni amodau i gael caniatâd ac nid yw'n cael ei roi'n awtomatig.

- b. Rhaid i'r ymgymerwr carthffosiaeth priodol awdurdodi pob arllwysiad i'r garthffos aflan gyhoeddus a gall y rhain fod yn amodol ar delerau ac amodau caniatâd elifiant masnach. Lle cyfeirir yn y canllawiau hyn at waredu i garthffos, dylai hyn bob amser fod yn amodol ar gael cymeradwyaeth o'r fath.
- c. Bydd unrhyw wastraff arall a gynhyrchir ar y safle yn gorfod cydymffurfio â'r Ddyletswydd Gofal (Cyfeiriad 1) o dan Ddeddf Diogelu'r Amgylchedd 1990 a gallant hefyd orfod cydymffurfio â'r Rheoliadau ar gyfer Trwyddedu Rheoli Gwastraff, 1994. Yn ogystal, mae rhai gwastraffau peryglus yn dod o dan Reoliadau Gwastraff Arbennig 1996 (Cyfeiriad 6). Ceir deddfwriaeth ar wahân yng Ngogledd Iwerddon. Gellir cael cyngor gan yr Asiantaeth.
- ch. Mae angen cael trwydded gan yr Asiantaeth fel rheol ar gyfer storio, defnyddio a gwaredu sylweddau ymbelydrol.

2. CYFLWYNIAD

Gellir osgoi'r rhan fwyaf o lygredd. Gall cynllunio cyfleusterau a dulliau gweithio yn ofalus leihau'r perygl o golledion a gall mesurau syml sicrhau nad yw colledion yn troi'n achosion o lygredd. Bach iawn yw cost y mwyaf o'r mesurau sydd eu hangen i atal llygredd, yn enwedig os cynhwysir hwy adeg dylunio'r system. Ar y llaw arall, gall cost glanhau llygredd fod yn uchel iawn a gall fod angen talu iawndal sylweddol i berchenogion pysgodfeydd a defnyddwyr eraill i lawr yr afon. Ymhellach, gall mesurau atal llygredd gynnig manteision economaidd pwysig, gan gynnwys arbed defnyddiau crai a chynhyrchion drudfawr, lleihau damweiniau, a lleihau'r perygl o orfod wynebu achosion llys am droseddau llygru dŵr. Cyflwyno mesurau atal llygredd yw'r cam cyntaf, ond i fod yn effeithiol rhaid i staff ddeall eu pwysigrwydd a chael hyfforddiant ar sut i'w gweithredu.

3. TRAENIAD AR Y SAFLE

Bydd dau fath o draen ar y mwyafrif o safleoedd

- i. Dylai traeniau dŵr arwyneb gario dŵr glaw heb ei lygru yn unig o doeau a ierdydd glân i gwrs dŵr neu suddfan (*soakaway*). O dan rai amgylchiadau, gall fod angen trin y dŵr cyn ei arllwys (gweler Adran 5(a)).
- ii. Dylai traeniau aflan gario dŵr llygredig, elifiant masnach a charthion domestig i waith trin carthion.

Gall elifiannau a gysylltwyd yn anghywir achosi problemau llygredd difrifol sydd yn aml yn gostus i'w cywiro. Sicrhewch fod cyfleusterau newydd neu dros dro megis sinciau, cawodydd, ffreuturau, labordai a mannau golchi i lawr yn cael eu cysylltu'n gywir â'r garthffos aflan ac nid â'r draen agosaf, a all fod yn rhan o'r system ddŵr arwyneb. Gall gwliau llawr mewrol, os darparwyd hwy, gael eu halogi'n hawdd a rhaid eu cysylltu â'r garthffos aflan.

Dylid cynnal pob system draeniad i sicrhau ei bod yn gweithio'n iawn. Dylid sefydlu rhaglen o archwiliadau rheolaidd a dylai gwliau a sympiau gael eu glanhau yn ôl y gofyn gan gontractwyr cofrestredig.

Un rheswm cyffredin dros achosion o lygredd yw diffyg ymwybyddiaeth o bwrpas traeniau a gwliau. Felly argymhellir defnyddio cōd lliw i ddynodi gwliau, gridiau a thraeniau, gan ddefnyddio glas ar gyfer dŵr arwyneb a choch ar gyfer dŵr aflan. Dylid gosod arwyddion lie bo'n briodol a chadw cynlluniau o'r system draeniad gyfan ar y safle.

4. GWAREDU CARTHION A DŴR GWASTRAFF

a. Carthion domestig

Dylid gofalu fod yr holl draeniau o doiledau, cawodydd, ffreuturau ac ati yn cael eu cysylltu â'r system draeniad aflan. Efallai y bydd angen cael caniatâd yr ymgymerwr carthffosiaeth i wneud cysylltiadau o'r fath.

b. Elifiant masnach

Yn ogystal ag elifiant o brosesau, mae elifiant masnach hefyd yn cynnwys chwythiadau o gywasgyddion a boeleri, cyddwysiadau ager, dŵr oeri, hylifau profi gwasgedd, dŵr aerdywhereu ac elifiant o lanhau cerbydau a pheiriannau. Cyn gwneud arllwysiad, dylid ystyried y dewisiadau'n ofalus, gan gynnwys ailgylchu, lleihau llygredd i'r eithaf ac ailddefnyddio ar y safle. Rhaid cael caniatâd ar gyfer pob arllwysiad o'r fath, naill ai gan eich ymgymerwr carthffosiaeth lleol ar gyfer arllwysiadau i'r garthffos aflan, neu gan yr Asiantaeth ar gyfer arllwysiadau i gwrs dŵr neu ddŵr daear. Yn y naill achos a'r llall fe godir arnoch am y caniatâd a byddwch yn gyfrifol am gydymffurfio â'r telerau. Os methwch â gwneud hyn gallwch gael eich erlyn. Dylech sicrhau bod:

- i. Cyfrifoldeb am yr arllwysiad wedi'i ddiffinio'n eglur.
- ii. Y man arllwys elifiant wedi'i farcio'n eglur.
- iii. Y man samplu yn ddiogel ac yn hygyrch ar bob adeg.
- iv. Archwiliadau rheolaidd yn cael eu gwneud, samplau eu cymryd, a phroffion eu gwneud os yn briodol.

5. TRAENIAD DŴR ARWYNEB

Mae traeniau dŵr arwyneb yn arllwys i gwrs dŵr neu i ddŵr daear drwy suddfan ddŵr. Felly rhaid i ddŵr arwyneb fod yn lân a heb ei lygru. Bydd dŵr gwastraff sy'n arllwys i'r draen ddŵr arwyneb yn achosi llygredd.

a. Trin dŵr o draeniau dŵr arwyneb

Gall meysydd parcio mawr, ffyrdd mynediad ac arwynebau caled achosi llygredd oherwydd yr olew sy'n gollwng o gerbydau a'r llwch a sbwriel sy'n ymgasglu arnynt. Gall fod angen trin y dŵr ffo o'r lleoedd hyn cyn iddo lifo o'r safle. Mae'r Asiantaeth wedi cyhoeddi canllawiau ar gael gwared â dŵr arwyneb (Cyfeiriad 3) sy'n disgrifio gwahanol ddulliau trin. Mae'r rhain yn amrywio o systemau rheoli "yn y ffynhonnell" megis arwynebau athraidd a ffosydd ymdreiddiad (*infiltration trenches*) i driniaeth "ym mhen y bibell", megis creu pantiau a gwlyptiroedd. Gelwir y rhain yn "Systemau Traeniad Trefol Cynaliadwy".

b. Gwahanwyr olew

Lle nad oes modd defnyddio technegau traeniad cynaliadwy, gall fod angen gosod gwahanwr olew ar y traeniau o feysydd parcio mawr neu o'r ardal o gwmpas tanciau storio olew uwchben y ddaear, gan ddibynnu ar ba mor fawr yw'r perygl o lygredd neu gollodion.

Mae canllawiau ar gyfer dethol a gosod gwahanwyr olew ar gael (PPG3-Cyfeiriad 4). Er mwyn iddynt weithio'n effeithiol, rhaid archwilio gwahanwyr olew yn rheolaidd, a'u gwagio pan fo angen gan gontractwr cofrestredig.

c. Caniatâd i arllwys

Fel rheol bydd angen cael caniatâd i arllwys dŵr os caiff traeniau dŵr arwyneb eu llygru. Fodd bynnag, os dilynir y cyfarwyddyd yn y ddogfen hon, ac os ynysir ffynonellau llygredd posibl oddi wrth y systemau dŵr arwyneb, efallai na fydd angen caniatâd arllwys.

ch. Falfiau cau

Gall falfiau cau ar y system draeniad gynnig diogelwch ychwanegol os defnyddir hwy i ynysu manau lle mae peryglon arbennig, er enghraifft, manau dadlwytho cemegion peryglus, neu ar gyfer manau a lanheir yn rheolaidd â chemegion. Mewn rhai achosion fe'u defnyddir gyda thanciau storio all-lein. Maent hwy'n sicrhau y gellir cadw colledion ar y safle i'w trin a'u gwaredu'n briodol. Gall 'dŵr tân' llygreddig gael ei reoli hefyd os bydd tân.

d. Pibellau dŵr to

Dylid arllwys dŵr to heb ei halogi yn uniongyrchol i'r system ddŵr arwyneb drwy fannau traenio uniongyrchol neu drwy gwlliau ochr-fynediad â thopiau wedi'u selio. Dylid osgoi gwlliau neu gratiau agored gan y gallant ganiatáu i lygredd fynd i mewn i'r system. Ni ddylai traeniau dŵr to fynd drwy unrhyw wahanwr olew fel rheol.

6. DADLWYTHO A THRIN DEFNYDDIAU

Mae bob amser perygl o golledion a damweiniau wrth drin defnyddiau. Felly mae'n bwysig adnabod y peryglon hyn er mwyn eu lleihau i'r eithaf.

- a. Dylai manau llwytho a dadlwytho gael eu dynodi, eu marcio a'u hynysu oddi wrth y system draeniad ddŵr arwyneb.
- b. Dylid nodi'r llwybrau a ddefnyddir ar gyfer symud defnyddiau ar y safle er mwyn gallu ymgorffori unrhyw fesurau diogelu angenrheidiol.
- c. Os oes modd dylai ierdydd a ddefnyddir i storio, trin a gweithgynhyrchu gael eu toi gan fod hyn yn lleihau cyfaint yr hylif halogedig mae angen ei waredu drwy'r traeniau.
- ch. Gall fod angen byndiau, ar ffurf rampiau neu risiau, i ynysu manau lle mae'r perygl mwyaf, megis safleoedd ail-lenwi â thanwydd, oddi wrth y system ddŵr arwyneb.
- d. Dylid goruchwyllo dadlwytho olew a defnyddiau peryglus. Dylid rheoli unrhyw golledion a rhoi gwybod amdanynt ar unwaith. PEIDIWCH Â'U GOLCHI Â PHIBELL DDŴR.
- dd. Dylai tanceri arllwys drwy gyplydd sefydlog cloadwy o fewn y bwnd.
- e. Dylid gosod falfiau cau awtomatig ar bibellau llenwi i osgoi gorlenwi.
- f. Lle bo modd dylid gosod pibellau uwchben y ddaear. Os bydd pibell yn cael ei gosod o dan y ddaear dylid ei rhoi mewn llawes neu ddwythell amddiffynnol a fydd yn dal colledion a dylid ei harchwilio a'i phrofi'n rheolaidd. Ni ddylid cysylltu dwythellau sy'n cario pibellau â'r system draeniad ddŵr arwyneb.

7. CYFLEUSTERAU STORIO

- a. Gall tanciau storio tanddaear gyrydu a chael eu difrodi, ac felly mae tanciau uwchben y ddaear yn well. Mewn ardaloedd lle mae dŵr daear yn agored iawn i lygredd (Cyfeiriadau 5 a 6) gall yr Asiantaeth wrthwynebu gosod tanciau storio tanddaear. Os oes rhaid storio o dan y ddaear, gall fod angen nifer o fesurau amddiffynnol megis tanciau a phibellau croen dwbl a dyfeisiau sy'n canfod colledion. O dan rai amgylchiadau gellir gosod tanciau tanddaear o fewn bwnd yn null islawr.
- b. Dylai pob tanc, drwm a chynhwysydd storio uwchben y ddaear gael ei osod ar sylfaen anathraidd o fewn bwnd. Dylid adeiladu'r bwnd o ddefnydd sy'n anathraidd i'r hylif sy'n cael ei storio. Gellir cael cyfarwyddyd manwl ar storio olew uwchben y ddaear gan yr Asiantaeth (PPG2-Cyfeiriad 7). Dylid osgoi storio ar neu uwchben lefel y to.

- c. Defnyddiwch danciau neu gynwysyddion o faint ac adeiladwaith priodol bob amser, na fyddant yn gollwng nac yn cyrydu, a sicrhewch fod y cynnwys a'r cyfaint wedi'u labelu'n eglur arnynt.
- ch. Dylid rhoi hambyrddau diferu o dan ddrymiau a chynwysyddion eraill sy'n cael eu defnyddio.

8. RHEOLI GWASTRAFF

Mae'r ddeddfwriaeth ar reoli gwastraff yn gymhleth iawn. Amlinellir y prif egwyddorion yn yr adran hon, ond fe'ch cynghorir i gysylltu â'ch swyddfa Asiantaeth yr Amgylchedd leol am gyfarwyddyd a chynghor penodol am y safle.

a. Lleihau, ailddefnyddio ac ailgylchu

Dylid ystyried dulliau o leihau gwastraff, megis ailddefnyddio ac ailgylchu. Gellid gwneud arbedion sylweddol wrth i gostau defnyddiau crai a gwaredu gwastraff godi (PPG8-Cyfeiriad 8).

b. Dyletswydd Gofal a deddfwriaeth ar wastraff

O dan Ddeddf Diogelu'r Amgylchedd 1990, mae Dyletswydd Gofal ar gynhyrchwyr gwastraff i sicrhau yr ymdrinnir ag ef yn briodol. Rhaid i wastraff gael ei storio'n ddiogel ar y safle ac mae dyletswydd ar y cynhyrchwr i sicrhau bod y contractwr gwastraff sy'n ei waredu wedi'i gofrestru ac yn cael disgrifiad llawn ohono. Mae llosgi gwastraff a gwaredu ar-y-safle yn dod o dan y Rheoliadau ar gyfer Trwyddedu Rheoli Gwastraff.

c. Storio

Os na ellir osgoi cynhyrchu gwastraff, rhaid ei storio a'i waredu'n briodol. Efallai y bydd angen cael trwydded gan yr Asiantaeth i wneud hyn o dan rai amgylchiadau. Mae sbwriel yn achosi llygredd a rhaid sicrhau nad yw'n dianc. Felly ni ddylai sgipiau gael eu gorlenwi a dylid eu gorchuddio neu dylid codi ffensys o amgylch manau storio gwastraff i atal sbwriel rhag cael ei chwythu allan.

ch. Sgipiau naddion a chywasgwyr

Bydd sgipiau naddion (*swarf*) a chywasgwyr sbwriel yn aml yn arllwys hylif llygredig. Dylid eu lleoli ar sylfaen anathraidd a'u hynysu oddi wrth y system draeniad ddŵr arwyneb gan ddefnyddio hambwrdd dal colledion, cyrbau uchel neu fyndiau "rholio-drosodd". Mae'n well eu gorchuddio i rwystro dŵr glaw rhag cronni a'u cysylltu â'r garthffos aflan. Dylid glanhau unrhyw golledion ar unwaith, gan ddefnyddio tywod neu ddefnydd amsugol. Er nad oes angen cael trwydded reoli gwastraff ar gyfer cywasgwyr, rhaid eu cofrestru gyda'r Asiantaeth.

d. Rheoliadau defnydd pacio

Os yw cwmni yn trin dros 50 tonnall fetrig o ddefnydd pacio y flwyddyn, ac os oes ganddo drosiant blynyddol o dros £5 miliwn (£1 filiwn o Ebrill 2000), gall fod gofyn iddo gofrestru â'r Asiantaeth neu â chynllun cydymffurfio i sicrhau ei fod yn cwrdd â rhwymedigaethau adennill ac ailgylchu gwastraff y Rheoliadau ar Rwymedigaethau a Chyfrifoldebau Cynhyrchwyr (Gwastraff Pacio) (1997).

dd. Gwastraff hylifol

Rhaid i wastraff hylifol, gan gynnwys toddyddion ac olew, gael ei storio'n ddiogel mewn safle wedi'i fyndio cyn cael ei gasglu gan contractwr gwastraff trwyddedig (gweler Cyfeiriadau 9 a 10). Ni ddylai hylifau gwastraff gael eu harllwys i'r system ddŵr arwyneb o dan unrhyw amgylchiadau. Gellir arllwys rhai hylifau o'r fath i'r garthffos aflan drwy gyfleuster dynodedig, os yw caniatâd elifant masnach priodol wedi'i roi (gweler Adran 1b).

e. Gwastraff arbennig

Diffinnir rhai gwastraffau peryglus, gan gynnwys toddyddion ac olewau, fel "gwastraffau arbennig" a rheolir y rhain drwy system fwy llym o nodion cludlwyth (gweler Cyfeiriad 2).

9. GWAITH CYNNAL A CHADW RHEOLAIDD

Dylid sefydlu rhaglen reolaidd o archwilio gwahanwyr olew, gweithfeydd trin elifant, tanciau storio (uwchben ac o dan y ddaear), pibellwaith, traeniau, muriau bwnd, hysbysiaidau ac unrhyw gyfarpar atal llygredd. Dylai fod trefn adrodd eglur sy'n sicrhau bod diffygion yn cael eu cywiro'n gyflym pan fo angen. Lle bo modd, rhowch gyfrifoldeb personol i'r staff dros y rhaglen gynnal a chadw.

10. GLANHAU A DISEIMIO

Gall gweithgareddau glanhau, gan gynnwys glanhau cyfarpar, ierdydd, lloriau, cynwysyddion a cherbydau, gynhyrchu llawer iawn o ddŵr llygredig. Mae gan bob sylwedd glanhau y potensial i lygru, hyd yn oed os yw eu gweithgynhyrchwyr yn honni eu bod yn 'fioddiraddadwy' neu'n dderbyniol i'w harllwys i mewn i draeniau. Rhaid peidio â gadael i ddŵr sy'n cynnwys glanedyddion, diheintyddion, diseimwyr neu unrhyw sylwedd glanhau arall fynd i mewn i'r system draeniad ddŵr arwyneb neu i suddfannau (PPG13-Cyfeiriad 11).

- a. Dylai pob gweithgaredd glanhau a golchi gael ei wneud mewn manau dynodedig wedi'u hynysu oddi wrth y system ddŵr arwyneb a dylent draenio i'r garthffos aflan. Dylid marcio'r llecyn yn eglur ac argymhellir gosod cwrb neu fwnd "rholio-drosodd" o'i amgylch. Dylid ystyried ailgylchu'r dŵr.
- b. Sicrhewch, drwy ddefnyddio arwyddion eglur, fod yr holl staff a chontractwyr sy'n gweithio ar y safle yn gwybod am y cyfleusterau ar gyfer gwaredu dŵr o weithgareddau glanhau. Gosodwch arwyddion i farcio gwlliau dŵr arwyneb a rhybuddio na ddylid eu defnyddio i waredu dŵr gwastraff.
- c. Ni ddylai ierdydd sy'n traenio i'r system ddŵr arwyneb gael eu diseimio na'u glanhau ag ager oni bai
 - (i) bod y gwlliau'n cael eu selio ac unrhyw hylif ei amsugno â defnyddiau amsugol, neu
 - (ii) fod falf wedi'i gosod yn allfa'r system sy'n cael ei chau yn ystod y gwaith glanhau. Dylai'r golchiadau sydd wedi crynhoi gael eu gwaredu gan gludwr gwastraff cofrestredig.

11. GWAITH DYMCHWEL AC ADEILADU

Gall gweithgareddau dymchwel ac adeiladu ar eich safle greu gwastraff a chynyddu'r perygl o lygredd (PPG6-Cyfeiriad 12). Sicrhewch fod hen danciau a phibellau'n wag cyn ymyrryd â hwy a bod unrhyw gyfleusterau storio cemegion ac olew dros dro wedi'u byndio. Dylid darparu ar gyfer trin dŵr siltaid a chofiwch y gall sment a choncrit wneud niwed i gyrsiau dŵr.

12. HYFFORDDI STAFF

Dylid sicrhau bod staff yn gyfarwydd â'r ddeddfwriaeth berthnasol ac yn gwybod beth yw eu cyfrifoldebau. Cynhwyswch wybodaeth atal llygredd mewn sesiynau hyfforddi ar gyfer staff sy'n gweithio ar y safle a chontractwyr. Defnyddiwch newyddlenni, posteri a hysbysiadau i gryfhau'r neges. Efallai y bydd eich swyddfa Asiantaeth yr Amgylchedd leol yn gallu helpu gyda deunydd hyfforddi a siaradwyr. Dylai staff allweddol fod yn gyfarwydd â'r systemau traenio a dylid cynnal ymarferiadau ar beth i'w wneud os ceir colledion. Dylai rhifau ffôn pwysig, megis y gwasanaethau argyfwng, y cwmni dŵr lleol ac Asiantaeth yr Amgylchedd fod ar gael yn hwylus i'r holl staff. Anogwch y staff i roi gwybod am beryglon llygredd a chynnig atebion iddynt, efallai drwy gyfrwng cynllun awgrymiadau.

13. CYNLLUNIAU ARGYFWNG

Gwnewch archwiliad cyflawn o'r safle i nodi ffynonellau llygredd posibl. Lle gellir osgoi'r rhain drwy newid arferion neu ddefnyddiau neu drwy dulliau eraill, lluniwch raglen weithredu i ymdrin â hwy. Dylid gwneud rhestr o'r cemegion a gedwir, ei diweddarau'n gyson a'i chadw ar y safle. Paratowch gynlluniau argyfwng ar gyfer pob digwyddiad posibl a rhowch arwyddion cyfarwyddo, cyfarpar a defnyddiau priodol (megis rhawiau, tywod, defnyddiau amsugol, a byngiau ar gyfer traeniau) mewn lleoliadau allweddol a hygyrch. Ystyriwch effaith tân mawr a chynlluniwch sut i ymdrin â dŵr tân (PPG18-Cyfeiriad 13). Sicrhewch fod cysylltiad penodol ar gael ar bob adeg i ymdrin ag argyfyngau ac i gysylltu â'r gwasanaethau argyfwng a'r Asiantaeth.

14. DIOGELWCH

Diogelwch eich safle rhag fandaliaeth a lladrad. Mae llawer achos o lygredd yn ganlyniad i ddiogelwch gwael. Clowch giatia, drysau a falfiau a gwnewch ffensys yn ddiogel. Lle bo modd, storiwch ddefnyddiau dan do.

15. CYFEIRIADAU

1. Waste Management - The Duty of Care - A code of practice. ISBN 0-11-753210-X
2. Classification of special waste: Taflen Wybodaeth 1: Asiantaeth yr Amgylchedd
Use of the consignment note: Taflen Wybodaeth 2: Asiantaeth yr Amgylchedd
Obtaining and sending consignment notes: Taflen Wybodaeth 3: Asiantaeth yr Amgylchedd
A Guide to the Special Waste Regulations 1996: SEPA
3. A Guide to Sustainable Urban Drainage: SEPA/Asiantaeth yr Amgylchedd
4. PPG3: Gwahanwyr olew mewn systemau traeniad dŵr arwyneb: defnydd a dyluniad
5. Policy and Practice for the Protection of Groundwater. ISBN 0-11-310145-7
6. Groundwater Protection Strategy for Scotland: SEPA
7. PPG2: Tanciau storio olew uwchben y ddaear
8. PPG8: Storio a gwaredu hen olew yn ddiogel
9. "Money for nothing, waste tips for free". Fideo ar leihau gwastraff:
Asiantaeth yr Amgylchedd. Ffôn/wch 0345 337700 i archebu copi di-dâl
10. Solvent pollution and how to avoid it
11. PPG13: Glanhawyr dŵr ac ager gwasgedd uchel
12. PPG6: Gweithio ar safleoedd adeiladu a dymchwel
13. PPG18: Pollution prevention measures for the control of spillages and fire fighting run-off

Mae Cyfeiriadau 1 a 5 ar gael gan Wasg y Llywodraeth, Ffôn 020 7873 0011/9090.

Mae Cyfeiriadau 2-4 a 6-12 ar gael yn ddi-dâl gan yr Asiantaethau.

Mae holl ganllawiau atal llygredd yr Asiantaethau ar gael ar y safweoedd isod.

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Ffacs: 01903 821 832

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Y rhif ffôn argyfwng 24 awr ar gyfer rhoi gwybod
am unrhyw ddiogwyddiad amgylcheddol mewn
perthynas ag aer, tir a dŵr.

ASiantaeth yr Amgylchedd
Llinell Argyfwng

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