Pollution Prevention Standard

(SHEMS-STD-GR-064)

Unitas
Stoke-on-Trent Ltd.

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1. Introduction

The purpose of this standard is to set out the requirements for effectively managing Unitas activities to prevent pollution of water (including streams, rivers, aquifers, groundwater and surface water drainage systems), air and land. This is in order to comply with legislation and project or contract-specific requirements. This standard also includes preventing pollution to foul water drainage systems.

Any amendments to this standard must be approved by Unitas SHE Director.

2. Scope

The scope of the SHEMS covers all persons, workplaces and Operations in the Unitas business.

Exceptions will be documented through a SHEMS Appendix B process (SHEMS-FOR-GR-999), authorised by the Operations Director responsible for coordinating SHE.

Unitas SHEMS manual (SHEMS-STD-GR-003) provides guidance and signposting for the compliance, implementation, monitoring, audit and review of our systems, and demonstrating continual improvement.

2.1 External References

- CIRIA Environmental Good Practice on Site Guide (4th edition)
- CIRIA Toolbox Talks
- PPG6 Working on Construction and Demolition Sites
- HTMA Environment Training Videos
- Various Pollution Prevention Guidelines - click and expand 'Guidance' section
- Flood risk activities - environmental permits, exemptions and exclusions

2.2 Definitions and Acronyms

Watercourse	Includes all rivers and streams and all ditches, drains, cuts, culverts, dykes, sluices, sewers (other than public sewers) and passages through which water flows.
Controlled waters	Includes territorial waters, coastal waters, inland freshwaters (i.e. lake, pond, river, and reservoir) and ground waters.
Main river	Watercourse shown as such on main river maps held by Defra and Welsh Government
Ordinary watercourse	A watercourse that does not form part of a main river
Public sewer	A sewer for the time being vested in a sewerage undertaker.
Culvert	A covered channel or pipe designed to prevent the obstruction of a watercourse or drainage path by an artificial construction.
Local Lead Flood Authority (LLFA)	Responsible for consenting activities on ordinary watercourses except where there is an Internal Drainage Board. Usually, the local authority acts as the LLFA.
Internal Drainage Board (IDB)	Internal Drainage Boards local public authorities established in areas of special drainage need in England and Wales. They have permissive powers to manage water levels within their respective drainage districts. IDBs undertake works to reduce flood risk to people and property and manage water levels to meet local needs.
Secondary Containment System (SCS)	A containment system or bund used to prevent the leakage of hazardous liquids, particularly oil and fuel.
Trade Effluent Consent	Consent given from a statutory water company allowing the discharge of substances other than sewage to be discharged to the foul drainage system. Conditions apply.
Environmental Permit (to discharge)	Consent given from the relevant environmental regulator (e.g. Environment Agency, SEPA, NRW) to discharge to surface water systems, e.g. rivers, streams etc. Conditions apply.

Environmental Permit / Flood Risk Activity Permit (previously known as Flood Defence Consent)	Required for certain types of work within or adjacent to watercourses that could affect the flow of water and / or flood storage capacity. For main rivers, these are obtained from the relevant environmental regulator (e.g. Environment Agency, SEPA, and NRW), for other watercourses, these are obtained from LLFAs or Local Councils. Activities fall under three categories: ▪ Regulated activities - require an Environmental Permit (either Standard Rules or Bespoke) ▪ Exempt activities - require registration and must meet the descriptions and conditions for the relevant exemption ▪ Excluded activities - no permission required if operating within the description and conditions of the exclusion
Particulate Matter (PM)	Small particles of matter suspended in the earth's atmosphere. Particulate matter can be man-made or naturally occurring. Particulates of less than 10 micrometres (PM_{10}) are known as respirable suspended particles (RSP) and can cause damage to human health from inhalation. This includes particles of 2.5 micrometres or less ($PM_{2.5}$) known as fine particles.
Greenhouse Gas (GHG)	Gases that absorb solar radiation and contribute to climate change including carbon dioxide, methane, ozone and F-gases.
Fluorinated gases (F-gases)	Hydroflurocarbons (used in refrigeration and air conditioning), perfluorocarbons (used in electronics, cosmetics and pharmaceutical industries) and sulphur hexafluoride (an insulation gas used in switchgear). Regulations apply to businesses that install, maintain or service stationary refrigeration, air conditioning and / or heat pump equipment. This requires personnel and companies employing these personnel to hold the relevant certification.
Ozone Depleting Substances (ODS)	Gases that damage the ozone layer, which absorbs 97-99% of the sun's medium frequency UV radiation.
Global Warming Potential (GWP)	A relative measure of how much heat a greenhouse gas traps in the atmosphere compared to carbon dioxide (which has a standardised GWP of 1). GWP is calculated over a specific time period, e.g. 20, 100 or 500 years.
Environmental Impact Assessment (EIA)	This is a statutory assessment required for particular types of development under the Town & Country Planning Act. An EIA may require long-term environmental monitoring prior to planning consent being obtained (e.g. noise, traffic, ecology etc.). An Environmental Statement is produced that compiles and summarises the environmental information relating to the development, including: ▪ A description of the development ▪ Outline of alternatives and reasons for the choice made ▪ A description of the aspects of the environment likely to be affected; e.g. population, ecology, soil, water, air, climatic factors, archaeology & heritage, landscape and their interrelation ▪ A description of the likely impacts on the environment ▪ Measures to prevent or reduce environmental impacts The development must comply with the measures set out in the Environmental Statement. The EIA is a different process to the internal environmental aspect & impact assessment process and is not normally under the control or direction of Unitas (except for residential developments where Unitas is the developer).

3. Unitas Requirements for Preventing Pollution

Consideration must be given to the time taken to obtain any relevant environmental permits to discharge (or consents), trade effluent consents and environmental permits for flood risk activities and the cost of operational controls such as plant and equipment, including monitoring equipment, should be assessed.

Prior to any works commencing, the potential pollution impacts from Unitas activities must be assessed in accordance with the Risk and Impact Assessment Standard (SHEMS-STD-GR-014). This assessment must include identifying any control measures required to reduce the impact of our activities.

For construction notifiable projects (as defined in Construction, Design and Management (CDM) Standard - SHEMS-STD-GR-025), the Project Environmental Co-ordinator must be appointed using the appropriate appointment sheet (Environmental Co-ordinator Appointment Sheet - SHEMS-FOR-GR-004). The person appointed must be a senior member of the project team.

Potential impacts and control measures must be communicated to all relevant staff and subcontractors. Subcontractors must include relevant control measures in method statements and risk assessments. All control measures identified for any works need to be in place and operational prior to starting those works. Control measures must be monitored to ensure that they are in place when required, effective and maintained throughout the works.

Details of control measures must be included in site inductions.

Relevant Toolbox Talks should be undertaken to communicate requirements on an on-going basis.

3.1 Emissions to water and land

There are a number of UK laws and regulations that exist to protect the water environment including rivers, streams, lakes, reservoirs and groundwater. The regulations apply to pollution, abstraction and the integrity of watercourses and flood defences. The assessment of environmental impacts from the works and the implementation of this standard will demonstrate compliance with relevant legislation and codes of practice.

In England and Wales, the Environment Agency (EA) and Natural Resources Wales (NRW) respectively are responsible for consenting and enforcement relating to main rivers, while Lead Local Flood Authorities (LLFAs) (often this is the Local Authority) are responsible for consenting and enforcement for ordinary watercourses (see definitions), except where there is an Internal Drainage Board.

The Environmental Aspect and Impact Assessment should include reference to any watercourses within or in close vicinity to the site, and the existing drainage system. Potential pollutants to be considered include oil, silt, cement, plaster, building chemicals, cleaning products and washout from concrete mixers.

The escape of waste can cause pollution of water and land, including litter. Waste must be properly contained and managed in accordance with the Waste Management Standard (SHEMS-STD-GR-065) to prevent pollution.

3.1.1 Site drainage

For construction sites and premises under Unitas control, a site drainage plan should be developed showing locations of drainage (surface water drains, soakaways, land drains, foul water and combined sewers) and watercourses and potential sources of pollution e.g. fuel / oil storage, soil stockpiles, contamination, COSHH storage etc. This can be in the form of an environmental constraints plan.

The location of drain runs should be established, including whether they discharge to foul sewers, combined sewers or surface water systems (including ditches, streams, culverts etc.). The integrity of existing drains should be checked if they are to remain in use, particularly where foul and surface water drains cross over or are located close by to each other and surface water drains discharge to watercourses of any description. Drain integrity can be checked by dye tests or CCTV.

At Unitas operated waste management facilities (waste transfer stations and household waste recycling centres), drainage systems must be able to provide fire water retention capacity in case of emergencies. The integrity of such drainage should be established to ensure it can operate correctly.

After the first inspection, drain integrity should be checked every five years that Unitas occupies the construction site, premises or waste facility. Records of initial and periodic inspections should be made.

Oil interceptors, separators and silt traps should be identified on site drainage / environmental constraints plans. Any watercourses including rivers, streams, ditches on or adjacent to site should also be marked. This information should be referenced in the Fire and Emergencies Plan (SHEMS-FOR-GR-080). Refer to the Fire Management Standard (Sites-SHEMS-STD-GR-021) or (Fixed-SHEMS-STD-GR-020).

Drains should be colour coded on site as follows:

- Surface water drain - blue
- Foul drain - red
- Combined drain - red 'C'
- Interceptors - orange

Drain covers or protection should be used on drains in sensitive areas. Surface water run-off contaminated by silt, heavy metals, chemicals, sewage or oil must not be allowed to enter surface water drains or watercourses.

It should also be established if any of the surface water drains discharge directly into any nearby watercourse. Where this is the case, measures to be taken in the event of a spill to prevent pollutants entering these watercourses e.g. providing drain covers or placing a boom across the point of discharge, must also be included in the site or premises Fire and Emergency Plan. Contaminated surface water must not be allowed to enter surface water drains or watercourses.

Attention must also be given to preventing pollution of land from Unitas activities, as remediation following contamination from polluting substances can be both difficult and expensive.

3.1.2 Piling, groundwork and penetrative ground improvement

Site investigation reports should be reviewed to identify site ground conditions in relation to groundwater levels and aquifers. The project team can also use the Environment Agency websites to view maps of groundwater and aquifers local to the site. Consideration should be given to any proposed piling and excavation or groundworks that have potential to impact on groundwater quality, particularly on contaminated sites. Increased protection measures may be required if the site is on or near a groundwater source protection zone or sensitive aquifer.

Where there is no alternative to piling or penetrative ground improvement, a method should be selected that minimises the risks of groundwater pollution or gas migration.

On contaminated sites, piling and groundworks could spread contamination to clean areas of ground (vertically and horizontally) if not controlled.

Any specific measures identified to protect groundwater, aquifers and land should be included in the Environmental Aspect and Impact Assessment and communicated to relevant subcontractors for inclusion in method statements.

3.1.3 Installation of ground source heating and cooling systems

There are several environmental risks associated with the installation of ground source heating and cooling systems and the local regulator (EA, SEPA or NRW) should be contacted at an early stage to discuss the intended location, proposed design and operation of the system.

For further guidance on this issue refer to 'Environmental good practice guide for ground source heating and cooling' published by the Environment Agency.

3.1.4 Surface water run-off

Discharge of clean surface water run-off (for example from a roof, road, pathway or clean standing area) to surface water drains, watercourses and soak-away does not require an Environmental Permit (or discharge consent). Clean surface water must not be contaminated with silt, heavy metals, chemicals, sewage or oil. Any contaminants must be removed prior to discharge.

Surface water run-off from temporary or permanent car parks or other areas of hardstanding may become contaminated with oil. Regulators may require that such water can only be discharged to surface water drains without a permit if the water passes through a suitable and well-maintained oil / petrol interceptor prior to discharge (see PPG3 - Section 2.1), particularly for waste transfer stations and household waste recycling centres. Oil separators must be inspected every three months by a trained and competent person and the date and findings of the inspection recorded.

3.1.5 Water from excavations

Water from excavations can be:

- Discharged over open ground (only where the water is uncontaminated and will not cause localised flooding)
- Discharged into a storm drain or surface waters (either under an environmental permit or in accordance with the Unitas Business Stream Minimum Standard for Pumping out Excavations - SHEMS-MST-DPS-0044)
- Discharged to a foul sewer (under temporary Trade Effluent Consent from the relevant water company), or
- Tankered off site and disposed of at a permitted water treatment facility as a waste (see Waste Management Standard - SHEMS-STD-GR-065).

In England and Wales a temporary discharge of **uncontaminated water** from an excavation to a storm drain or surface water e.g. rivers, streams, estuaries, lakes, canals or coastal waters does not require a permit providing the following conditions, listed in the Environment Agency regulatory position statement (RPS) ,are met.

The discharge must:

- be temporary and last less than 3 consecutive months
- be made to a surface water (such as a river, stream or the sea)
- not pollute surface water or adversely affect aquatic life, or designated sites or species
- not result in the spread of non-native invasive species, parasites or disease
- not cause flooding from surface water
- not cause erosion of the banks or bed of surface water

The discharge must not be located within, or less than 500 metres upstream of:

- Sites of Special Scientific Interest (SSSI)
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- sites in the process of becoming SACs or SPAs (known as ‘candidate SACs’, ‘possible SACs’, ‘potential SPAs’ and ‘sites of community importance (SCIs)’
- internationally designated Ramsar sites
- other nature conservation sites, for example ancient woodlands, Local and National Nature Reserves - check the map for these
- local wildlife sites, i.e. sites designated as having high local value for wildlife – contact your local authority

If the discharge rate is more than 10% of the dry weather flow rate of the surface water the Environment Agency must be contacted. A high discharge rate may increase flood risk or have other local environmental consequences.

In order to meet the above conditions, water from excavations is likely to require settlement/filtration and possibly further treatment. An assessment must be made for planned discharges of water to surface water

drains or watercourses against the above criteria. This must be recorded and include details of control measures such as consent conditions, settlement tanks and monitoring / inspection. See Unitas Minimum Standards for Pumping out Excavations - SHEMS-MST-DPS-0044).

If the conditions can't be met, a discharge from an excavation may require a 'bespoke' Environmental Permit from the environmental regulator, which will incur a cost (initial application and annual fee) and the application period for which can be up to four months.

If the water discharge is from 'pump and treat' (pumping out contaminated groundwater or water from contaminated land so it can be treated) a bespoke permit **will** be required.

To comply with these rules water from excavations is likely to require settlement/filtration and possibly further treatment. An assessment must be made for planned discharges of water to surface water drains or watercourses based on these rules. This must be recorded and include details of control measures such as consent conditions, settlement tanks and monitoring / inspection. See Unitas Minimum Standards for Pumping out Excavations - SHEMS-MST-DPS-0044).

Discharges of water from an excavation to a **foul sewer** will require a temporary trade effluent consent from the relevant water company.

3.1.6 Vehicle cleaning

Wash water from vehicle cleaning containing oil or detergents is considered to be trade effluent. This must be disposed of to foul sewer (with permission, i.e. a Trade Effluent Consent) or tankered off site as a controlled waste. Trade Effluent Consent is obtained from the local sewage undertaker (usually the local water company). Note that the use of detergents may affect the ability of an oil / petrol interceptor to separate oils from water effectively. Vehicle wash areas must be suitably located on hardstanding and sensitive drainage must be protected to prevent pollution, unless a stand-alone, self-contained unit is used.

Sites and premises that wash vehicles, plant, and equipment using automatic wash systems, high pressure or steam cleaners and by hand should follow Pollution Prevention Guideline 13 (PPG13): vehicle washing and cleaning.

The consent controls or limits the discharge by specifying:

- Maximum volume and flow rate
- Maximum and minimum pH values
- Maximum temperature
- Chemical parameters like Chemical Oxygen Demand (COD), Suspended Solids (SS) and heavy metals
- Additional controls may be imposed on harmful or toxic substances

The above parameters must be monitored to ensure compliance with the consent, including flow rate.

3.1.7 Concrete washout

Concrete wagon wash-out contains suspended solids and has a high pH, thus has the potential to pollute. Refer to Unitas Business Steam Minimum Standard (SHEMS-MST-DPS-041).The hierarchy of controls in relation to concrete wash out is:

- Avoid concrete wash-out on site (e.g. use of ConcreteSock® or by containing the washout and adding cement to create solid waste)
- Use concrete wagons with integrated wash-out collection tanks
- Contain on site and pump back into concrete wagon for reuse at the batching plant
- Treat on site and;
  - Discharge to foul sewer under a temporary Trade Effluent Consent
  - Discharge to surface water in accordance with the Environment Agency position statement for concrete wash-out (with a permit)

- Tanker off site and dispose of at a permitted water treatment facility as a waste

All of the above options involve a cost, whether for treatment of the wash-water prior to discharge, or for off-site disposal. These costs should be included and requirements communicated to subcontractors for inclusion in pricing.

Concrete wash out areas must be designed to ensure no untreated wash water is allowed to enter surface water drains or watercourses, including groundwater.

The chosen solution for dealing with concrete wagon wash-out water must be recorded in the Environmental Aspect and Impact Assessment form and any associated plant or equipment must be identified and included in subcontractor packages or procurement schedules (including concrete socks, settlement tanks, pH dosing kit, details of monitoring records etc.). Contractors involved in concrete wash out activities must work to approved method statements including implementation of relevant control measures.

If the effluent is to be removed from site as waste (i.e. not returned to batching plant for reuse, but removed by tanker to a water treatment facility), details of the waste carrier and disposal point must be recorded. Refer to the Waste Management Standard (SHEMS-STD-GR-065).

3.1.8 Site accommodation

Site accommodation effluent (including that only from sinks) must not be allowed to flow directly onto the ground or into a watercourse without a Permit in place.

Discharges of site accommodation effluent to foul sewers may require a temporary Trade Effluent Consent or Connection Permit. This would usually be the case where a connection is made directly into a public sewer. Advice should be sought from the relevant water company.

Where site accommodation discharges to a client's foul sewer, their permission must be sought to ensure the discharge does not breach the conditions of any existing consent (i.e. volume, substances etc.).

Any planned discharges to watercourses or surface water drains that do not comply with the above descriptions should be identified as early as possible as these may require 'bespoke' Environmental Permits from the Environment Agency or other consents from water companies. These consents may incur charges and take time to obtain so should be planned for in advance. The Environmental Manager should be contacted if such permits or consents may be required.

3.1.9 Commissioning, flushing and cleaning

Discharges of flushing substances for commissioning pipework or water used for specialist stone / brick cleaning to foul sewers may require a temporary Trade Effluent Consent. The relevant water company may waive the requirement for Trade Effluent Consent if water is of high quality, therefore advice should be sought. These substances must not be discharged to surface water drains.

This may be obtained by Unitas or by a specialist contractor. The consent controls or limits the discharge by specifying:

- Maximum volume and flow rate
- Maximum and minimum pH values
- Maximum temperature
- Chemical parameters like Chemical Oxygen Demand (COD), Suspended Solids (SS) and heavy metals

The above parameters must be monitored to ensure compliance with the consent, including flow rate.

Additional controls may be imposed on harmful or toxic substances.

If it is not possible to obtain a temporary Trade Effluent Consent or waiver for these substances, it is likely they will need to be tankered off site for treatment at a permitted water treatment facility as a controlled waste.

3.1.10 Water abstraction

In some circumstances, water abstraction may be considered an option for the purposes of dust suppression, vehicle washing etc., for example if mains water supply is restricted. A licence or registration to abstract water may be required from the relevant environmental regulator (e.g. Environment Agency, SEPA) for abstractions of more than 20 cubic metres per day (in England and Wales) or 10 cubic metres per day (in Scotland) from a:

- River or stream
- Reservoir, lake or pond
- Canal
- Spring
- Underground source

The licence will specify where the water can be taken from, quantities allowed and what the water can be used for.

Any water abstraction activities must be monitored to ensure that either a) the volume abstracted remains below the relevant limit where no licence is in place or b) that the conditions of any abstraction licence are adhered to. Records of this monitoring must be retained on site.

3.1.11 Use of herbicides and pesticides in or near water

Permission must first be obtained from the environmental regulator if pesticides or herbicides are to be used:

- in a watercourse
- on the bank of a watercourse
- 5m or less from the top of the bank of the watercourse if a tractor or boom mounted sprayer is used
- 1 m or less from the top of the bank of the watercourse if a knapsack sprayer is used

In England form AqHerb01 must be completed by the contractor carrying out the works

Following submission of the completed form (usually by the subcontractor undertaking the works), the Environment Agency reviews the information and determines whether the activity is 'simple' or 'complex'. If it is the former the form is processed by the Permitting Centre in Sheffield within 10 working days. If it is the latter then the application is reviewed by the nearest local office and it can take up to 13 weeks to process.

The application must contain details of the site and watercourse, the person undertaking the treatment including National Proficiency Tests Council (NPTC) certification, the plant species to be treated and the herbicide to be used.

Anyone who uses herbicides on a commercial basis must have the necessary skills, knowledge and qualifications. They must hold a relevant NPTC certificate of competence in the safe use of pesticides if they:

- Were born after 31 December 1964
- Are a contractor, or
- Use pesticides on land which is not owned or used by them or their employer

Works can be undertaken by someone who is supervised by a person holding the above certification.

Relevant contractors must work to approved method statements that include measures to comply with environmental regulator permissions.

Whilst permission is also required to use pesticides or herbicides in or near watercourses in Wales and Scotland the regulations differ slightly so please contact your Environmental Manager for advice.

3.1.12 Fuel and oil storage and use

Specific regulations apply to the storage of fuel and oil in the UK as well as Unitas requirements. For all oil / fuel stored outside in quantities >200 litres; the following applies:

- Containers must be of suitable strength and integrity to prevent leaks
- Storage area must not be located:
  - Where there is a risk of impact or collision from traffic
  - Within 50m of a spring, well or borehole
  - Within 10m of a watercourse, ditch or drainage channel
  - Where spills could enter drains / manhole covers / unmade ground
  - In areas at risk of flooding
- Containers must be within a secondary containment system (SCS) or bund that holds 110% of the volume of the container or if there are multiple containers, 110% of the largest container or 25% to the total quantity, whichever is greatest
- For an open SCS, the area should be covered to prevent rain ingress resulting in contaminated water needing disposal (potentially as hazardous waste)
- The SCS must be impermeable to oil and water and not penetrated by any valve, pipe or opening used for draining the system
- Containers must be locked when not in use (between refuelling etc.)

- All valves, filters, sight gauges, vent pipes, taps & fill pipes must be within the SCS
- Draw-off hoses must have automatic cut-off valves

Drip trays or plant nappies should be provided at all fuel storage areas to catch spills during refuelling.

Fuel / oil deliveries must be supervised and fuel / oil containers must be placed into the secure storage area immediately on delivery.

Refuelling and dispensing should be carried out in a designated area with an impermeable surface sited away from watercourses, ditches and drains.

Suitable spill kits must be provided in close proximity to or within fuel storage areas, instructions for use must be displayed / available.

Fuel storage areas must be checked regularly for leaks and spills and to ensure appropriate signage and spill kits are available.

Suitable spill response training should be provided to relevant staff in accordance with the Unitas Master Training Matrix (SHEMS-FOR-GR-100), either as formal training or via Toolbox Talks.

Details of emergency spill contractors must be displayed in the event of serious spills that cannot be dealt with using spill kits. This information must also be included in the Fire Safety and Other Emergencies Plan (SHEMS-FOR-GR-080). Spill contractors must be members of the UK Spill Association.

Refer to Unitas Minimum Standards for:

- Oil and Fuel Storage - above ground (SHEMS-MST-DPS-0045)
- Refuelling (SHEMS-MST-DPS-0046)
- Spill Response (SHEMS-MST-DPS-0055)

3.1.13 Working on fuel storage lines and systems

The installation of new liquid fuel storage systems including lines (for example to feed heating systems etc.) is subject to Building Regulations and must be undertaken by OFTEC registered companies providing operatives who are members of OFTEC's competent person scheme.

Servicing and maintenance of oil heating equipment does not need to be certified under Building Regulations, but should still be done by a competent person. This can be demonstrated by registration with OFTEC's competent person scheme or other approved competent person schemes.

Decommissioning of redundant fuel tanks and lines does not require registration under competent person's schemes but must be carefully managed to identify and control the potential risks around the escape of oil and fuel. These works can be done by industrial decommissioning / waste management contractors provided that all tanks and lines will be fully decommissioned with no fuel remaining in any line or tank.

If any part of a system is to remain live (i.e. if any fuel is to be left in any tank or line following the works), works must be undertaken by persons registered under an approved competent person scheme. Clear instructions must be given to identify redundant and live areas.

Works on fuel tanks and lines must be covered by suitable RAMS including identification of environmental risks and control measures. Should the works take place in the vicinity of sensitive receptors (watercourses, groundwater, drinking water treatment facilities, nature conservation sites etc.); this must be taken into account when identifying control measures. A photographic record of fuel line / tank decommissioning works should be made with photographs taken before, during and on completion of the works.

Waste fuel and oil must only be removed by a registered waste carrier in accordance with the Waste Management Standard (SHEMS-STD-GR-065).

3.1.14 Chemicals and hazardous substances

Chemicals and hazardous substances must be managed in accordance with the Control of Substances Hazardous to Health (COSHH) Standard (SHEMS-STD-GR-051).

In addition to the requirements of the COSHH Standard, chemicals and hazardous substances must be stored away from watercourses and drains in a contained, bunded area. Storage containers / locations must be protected from damage from impact or collision. Containers must display correct labels, be properly sealed and containers must be free from damage with no leaks. Substances that can react with each other must be stored separately.

Works involving transport or disposal of significant quantities of chemicals or hazardous substances (e.g. tank draining, cleaning etc.) must be covered by suitable RAMS including identification of environmental risks and control measures. Persons undertaking the work must be suitably competent for the specific activities they will be doing.

Should the works take place in the vicinity of sensitive receptors (watercourses, groundwater, drinking water treatment facilities, nature conservation sites etc.) this must be taken into account when identifying control measures. Any discharge of chemical or hazardous substances (whether concentrated or diluted) to drains or watercourses must be covered by a suitable permit from the relevant regulator or utility provider.

Ensure suitable chemical spill kits are available in the event of spills and that suitable training to deal with spills has been undertaken in accordance with the Unitas Group Master Training Matrix (SHEMS-FOR-GR-100), either as formal training or via Toolbox Talks.

Waste chemicals, containers and used spill kit materials must be dealt with in accordance with the Waste Management Standard (SHEMS-STD-GR-065). Many chemicals and hazardous substances are likely to be hazardous waste, as will some containers.

Refer to Unitas Business Stream Minimum Standards for:

- Chemical and Paint Storage (SHEMS-MST-DPS-0042)
- Spill Response (SHEMS-MST-DPS-0055)

3.1.15 Wheel washing

Wheel wash facilities may be required by contract, planning or site controls to prevent mud being spread on public highways. Wheel washing should be carried out in a designated area of hard standing at least 10m from any watercourse. Silty run off must not be allowed to enter surface water drains and should be recycled wherever possible.

Silt treatment in the form of settlement or filtration may be required, and consideration must be given to other contaminants that may be present (e.g. oil, fuel etc.). Excess water may require discharge to foul sewer under a temporary Trade Effluent Consent.

3.2 Works in or near watercourses (flood risk activities)

3.2.1 England and Wales

Works in or near watercourses are regulated differently in England, Wales and Scotland. England and Wales are very similar with English regulation referring to Environmental Permits for Flood Risk Activities, while Welsh regulation refers to Flood Risk Activity Permits.

Before undertaking works in or near watercourses in England and Wales, it must be established what permissions are in place or are required. If works are planned in the following locations a Standard Rules or Bespoke Permit may be required, or an Exemption may need to be registered or the works may fall under the conditions and description for an exclusion (which does not need to be registered):

- On or near a main river (main rivers can be checked on the Environment Agency website for England or on the Natural Resource Wales website for Wales)
- On or near a flood defence structure
- In a flood plain or
- On or near a sea defence

Permission from the EA (in England) or NRW (in Wales) is required for the following regulated flood risk activities:

- Erecting any temporary or permanent structure in, over or under a main river, such as a culvert, outfall, weir, dam, pipe crossing, erosion protection, scaffolding or bridge
- Altering, repairing or maintaining any temporary or permanent structure in, over or under a main river, where the work could affect the flow of water in the river or affect any drainage work
- Building or altering any permanent or temporary structure designed to contain or divert flood waters from a main river
- Dredging, raising or removing any material from a main river, including when you are intending to improve flow in the river or use the materials removed
- Diverting or impounding the flow of water or changing the level of water in a main river
- Quarrying or excavation within 16m of any main river, flood defence (including a remote defence) or culvert
- Any activity within 8m of the bank of a main river, or 16m if it is a tidal main river
- Any activity within 8m of any flood defence structure or culvert on a main river, or 16m on a tidal river
- Any activity within 16m of a sea defence structure
- Activities carried out on the floodplain of a main river, more than 8m from the river bank, culvert or flood defence structure (or 16m if it's a tidal main river), if no planning permission is in place.

Various activities are exempt from the requirement for a full Environmental Permit, but must meet the specific description and conditions for that exemption. These are listed on the .gov website. These activities must be registered with the EA or NRW.

The following activities do not require either an Environmental Permit or an Exemption to be registered, however activities must be operated within the description and conditions of the exclusion (click for details):

- Work in an emergency
- If a Marine Management Organisation licence is in place
- Using ladders and scaffold towers
- Services crossing a river within an existing structure
- Flood protection devices attached to buildings
- Minor works for highways and rights of way on or near bridges and culverts

- Post and rail or post and wire fencing in a floodplain
- Temporary use of small fish traps
- Noticeboards more than 2m from the top of a river bank
- Clearing out a purpose-built sediment trap
- Site investigation boreholes and trial pits

The Business Steam / Unit Environmental Manager should be contacted for advice in relation to obtaining Permits, registering Exemptions or undertaking excluded works and for facilitating discussions with the EA or NRW.

In England and Wales, works to ordinary watercourses (streams, ditches, drains, culverts, rhynes, ponds, sluices etc.) which are likely to alter or impact the flow or storage of water, or for the erection of a culvert within and ordinary watercourse, consent will be required from the Local Lead Flood Authority (usually the Local Authority) or from the relevant Internal Drainage Board where these are in place.

Activities must be managed to prevent silty / muddy water from entering watercourses. Consideration should be given to forming cut-off trenches, vegetation corridors and settlement lagoons / tanks where appropriate. Silt fences and silt traps can be used to prevent silt entering watercourses / drains.

3.3 Emissions to air

Emissions to air from Unitas activities can be in various forms, including particulates, greenhouse gases, odours etc. The release of these substances into the air has a range of environmental impacts including affecting local air quality (and therefore human health) and contributing to climate change.

Where emissions to air escape Unitas site boundaries and cause nuisance to others, the Nuisance Management Standard applies (SHEMS-STD-GR-063).

3.3.1 Dust

Man-made particulate matter (PM) is generated from a number of sources such as plant / vehicle exhausts and wind-blown mineral dust. Particulate matter smaller than 10 micrometres (PM10) and 2.5 micrometres (PM2.5), known as respirable dust, can penetrate the lungs, settle and cause significant health impacts.

The environmental aspect and impact assessment should identify activities with a potential to generate particulates and relevant control measures to reduce significant impacts.

On-road vehicles and plant should be in good working order. Vehicles must hold a valid MOT certificate and be taxed and insured.

All off-road mobile plant should comply with the emission standards and directives outlined within the European particulate matter emission standards (all such plant should carry an EC approval number to indicate that it conforms to the levels given in the regulations for that type of machinery).

All plant should be well maintained. Any production of visible smoke (except on start-up) should result in the machine being stopped until any problems have been rectified or the plant replaced.

Engines and exhaust systems should be regularly serviced according to the manufacturer's recommendations and meet the relevant emission standards. Exhaust filters should be fitted to plant and equipment to reduce smoke and particulate emissions.

Plant and equipment must be sited away from the noise sensitive areas and if used intermittently shut down when not in use. Engine compartment doors should be closed. Where it is necessary suitable noise screening must be provided. Consideration should also be given to selecting work methods that do not generate vibration or excessive noise.

Construction sites, waste management facilities and surface mines can generate significant quantities of wind-blown mineral dust. These types of sites may have specific limits set by planning, contract or permit requirements. Where specific limits are in place, suitable equipment for monitoring must be used. This may include equipment for monitoring area and boundary dust. Monitoring programmes must include details of actions to be taken in the event that limits or trigger levels are breached.

3.3.2 Greenhouse gases

Greenhouse gases (GHGs) are gases in the atmosphere that absorb and emit thermal radiation, resulting in increases in the surface temperature of the earth and atmosphere.

GHGs include carbon dioxide (CO2), methane, nitrogen oxides (NOx), fluorinated gases (F-gases including HFCs), etc.

In relation to Unitas activities the most significant greenhouse gas is carbon dioxide released by the burning of fossil fuels for energy used at premises and sites and in plant, equipment and vehicles.

To minimise carbon emissions from Unitas activities:

- Use energy in fixed premises (offices, depots etc.) efficiently, e.g. turning lighting and equipment off when not in use - use posters and noticeboards to display performance
- Control energy consumption using timers, passive infrared (PIR) sensors etc.
- Maintain plant and equipment in good working order
- Minimise travel distances where possible, e.g. use video-conferencing, car sharing etc.
- Consider the use of energy-efficient plant and equipment e.g. LED lighting
- Consider the use of local energy generation where suitable, e.g. solar lighting, wind power
- Monitor energy consumption and review information to identify activities / times with high energy consumption - take action to reduce consumption

F-gases are commonly used in refrigeration and air conditioning systems and have a relatively high global warming potential (GWP). Legislation applies to the manufacture, supply and use of equipment containing F-gases and to the installation and servicing of equipment that uses F-gases. The legislation aims to prevent and reduce emissions of F-gases into the atmosphere.

In relation to the inspection and maintenance of air conditioning and refrigeration equipment on Unitas premises, refer to the Premises Management Standard (SHEMS-STD-GR-019).

In relation to the competence and qualifications of subcontractors responsible for working with F-gases, refer to the Procurement Standard.

3.3.3 Odour

The most significant impacts relating to odours are likely to be nuisance-related and are covered by the Nuisance Management Standard (SHEMS-STD-GR-063).

3.4 Monitoring

Monitoring of environmental impacts should be included in weekly site inspections undertaken in accordance with the Audit, Inspection and Weekly Monitoring Standard (SHEMS-STD-GR-008). The monitoring should include any corrective or preventive measure required and must be closed out in a timely manner.

3.5 Incidents

Pollution incidents must be reported internally in accordance with the Incident and Near Miss Reporting Standard (SHEMS-STD-GR-011).

Major pollution incidents (e.g. where there is a likelihood of regulator intervention / involvement) must be dealt with in accordance with the Major Incident Response Plan (SHEMS-STD-GR-013).

Also refer to Unitas Business Stream Minimum Standard for Spill Response (SHEMS-MST-DPS-0055).

3.5.1 Enforcement activity

Contact with relevant environmental regulators (e.g. local authority environmental health or planning department, Environment Agency, SEPA etc.) must be internally reported within 24 hours via the Action Management Log or via the Enforcement Authority Contact Standard (SHEMS-STD-GR-022).