Scottish & Southern Electricity Networks

# APPENDIX G – GENERAL ENVIRONMENTAL MANAGEMENT PLAN

Scottish & Southern Electricity Networks

TG-NET-ENV-517

Environmental

# General Environmental Management Plan (GEMP)

## - Contaminated Land

| | Name | Title |
|---|---|---|
| **Author** | Dan Thomas | Environmental Project Manager |
| **Checked by** | Simon Hall | Environmental Project Manager |
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# Contents

# 1 Introduction

1.1 Previous land use can lead to ground becoming contaminated with substances which may be hazardous to health or the environment. During construction works there is potential for these materials to be exposed, disturbed and mobilised. It may be possible to identify this as a risk during appropriate assessments at the planning stage, or it may be encountered unexpectedly during site works.

# 2 Legislation

2.1 Investigation and management of any potentially contaminated land must be undertaken in compliance with relevant Environmental and Health and Safety Legislation.

# 3 General Compliance Requirements

## 3.1 Planning the works

3.1.1 Plan works taking account of recognised best practice and all relevant waste regulations.

3.1.2 Key stakeholders for Contaminated land issues often include landowners / tenants, the local authority, and the Scottish Environment Protection Agency (SEPA).

3.1.3 Assess the risk of contaminated land issues at a site using historical land use checks and information from site walkovers, hydrological and geological mapping and other relevant data sources (sometimes referred to as Phase 1 Contaminated land assessments).

3.1.4 Where a risk of contamination is identified, further site investigations may be appropriate, including analysis of soil and water samples for specific suites of potential contaminants and more detailed contaminated land assessments (which may consider source, pathway, receptor models).

3.1.5 Identified, high risk or known areas of contaminated land should be recorded and identified clearly in project documentation, including clear scaled plans with inset showing location context of plan.

3.1.6 Contamination could however be encountered in areas where it has not been expected and checks must be undertaken to ensure that any risks to the environment are identified and controlled.

## 3.2 During works

3.2.1 During works keep a careful lookout for any signs of contamination during boring, excavating, soil stripping and similar operations.

3.2.2 Signs of potential contamination may include discoloured soil, unexpected odours, a fibrous texture to the soils (e.g. asbestos), or presence of foreign objects (e.g. chemical/oil, containers/waste).

3.2.3 Increased risks of contamination may exist if there is any evidence of previous soil workings, underground structures or waste pits, evidence of made ground, or old drain runs.

## 3.3 If contamination is encountered

3.3.1 Stop work immediately.

3.3.2 Report the discovery to the site manager and project environmental representative within 30 minutes. A SEAR may be raised to track the occurrence and expert advice and guidance on required measures / mitigation should be implemented. Ensure the landowner / occupier is informed.

3.3.3 Seal off the area to contain spread of contaminants.

3.3.4 Undertake risk assessment to minimise the risk to health and safety of site workers. This should identify acceptable working methods, PPE, contact, and other required procedures.

3.3.5 Clear site to ensure there is nothing that could cause fire or explosion.

3.3.6 Ensure that the suspected contamination is tested and characterised, including any Waste Acceptance Criteria required if waste is to be disposed offsite and agree changes to the existing site proposals and method statements.

3.3.7 Avoid causing or spreading contamination.

3.3.8 Do not stockpile contaminated soil unless it cannot be avoided. If it is necessary, stockpile only on an area of hard standing to prevent contamination of the underlying area. If possible, place material on non-permeable geotextile or membrane.

3.3.9 Cover the stockpile with plastic sheeting to prevent infiltration of precipitation and spread of soluble contaminants and to prevent potentially contaminated wind-blown dust.

3.3.10 Control surface drainage from stockpiled area. Remember water draining from a stockpile may be contaminated and require controlled off-site disposal.

3.3.11 Where disposal of contaminated land is required, this should be done in accordance with current Waste Legislation.

# 4 Revision History

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Scottish & Southern Electricity Networks

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Environmental

# General Environmental Management Plan (GEMP)

## - Private Water Supplies

| | Name | Title |
|---|---|---|
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| **Approved by** | Richard Baldwin | Head of Delivery |

# Contents

# 1 Introduction

1.1 Many construction works, including site investigation works, have the potential to impact on private water supplies (PWS). This can be through either disturbing drainage patterns (horizontally or vertically) or impacting on the quality of the water source. There is also the potential to impact on infrastructure of PWS, with pipes and tanks possibly omitted from service plans.

1.2 Damaging a PWS can have impacts on the health of the users, as well as severe financial and reputational impacts.

1.3 It is required to comply with the following in addition to any specific measures identified associated with the site.

# 2 General Compliance Requirements

## 2.1 Pre-construction

2.1.1 All PWS located within 250 m of the proposed works must be identified prior to commencement of any works.

2.1.2 A risk assessment should be undertaken to identify those PWS that have the potential to be affected by the works including consideration of:

- Type and depth of water supply source (e.g. borehole, spring or surface water abstraction);
- Catchment area; and
- Nature of proposed works (e.g. depth and extent of any proposed excavations, potential for pollution incidents / spillage etc).

2.1.3 Should the results of this assessment indicate a risk to the PWS, then mitigation shall be developed for inclusion in a site specific PWS Protection Plan that is discussed and agreed with the PWS owner.

2.1.4 In certain circumstances it may be appropriate to undertake water quality testing of the source or supply, to establish a baseline of current water levels and quality. This should be agreed as part of the PWS projection plan.

2.1.5 Prepare a contingency plan to deliver an alternative water supply (on a temporary or permanent basis) in the event of an unforeseen problem with the existing supply.

## 2.2 Construction

2.2.1 PWS requiring protection will have specific mitigation developed. Mitigation may include some / all of the following:

- Fence off the PWS intake (to avoid accidental damage and to deter animals) and identify relevant buffer distances;

- Installation of silt mitigation to prevent runoff from works areas entering the PWS. Use a precautionary approach as not all flow pathways may be immediately obvious;
- Avoid undertaking works within PWS catchments during wet weather or when wet weather is forecast as there will be increased surface water flows into the PWS which will be harder to control.
- Low impact access methodologies including the use of track panels where access to works are within the PWS catchment;
- Survey and peg out the route of the distribution main in the vicinity of the construction works and avoid / minimise activity within this area; and
- All site operatives working in the area should be made aware of the location of the PWS and of the sensitive catchment area through toolbox talks or similar, and should be reminded when works take place in this area.

2.2.2 Put in place measures to protect PWS distribution mains where they cross beneath roads / access tracks. These might include:

- Setting the existing pipe work within mass concrete;
- Upgrading or rerouting the existing pipe work;
- Ensuring that there are adequate pollution control and emergency response measures in place to deal with any accidents that could affect a water supply (e.g. spill response or sediment control);
- Implementation of regular, recorded checks on any pipework (visible signs of cracking or other damage); and
- Provision of an alternative supply (temporary / permanent).

2.2.3 Undertake regular health, safety and environment briefings to construction staff. Include information on:

- Presence and importance of water supply intake and distribution main nearby;
- Need to protect these from accidental damage;
- Need to act promptly if an accidental spill or pollution incident poses a threat; and
- Reporting requirements.

2.2.4 Regularly monitor works and their impact on the PWS. If the PWS is being impacted or has the potential to be impacted, stop those activities and seek specialist advice.

## 2.3 Unidentified Water Supplies

2.3.1 It is possible that previously unidentified PWS may be found during works.

2.3.2 If this happens, stop work in that location and seek specialist advice.

2.3.3 Necessary protection measures will need to be identified in consultation with the PWS owner, landowner, specialists and relevant authorities and implemented before work should resume in that location.

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Scottish & Southern Electricity Networks

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Environmental

# General Environmental Management Plan (GEMP)

## - Working with Concrete

| | Name | Title |
|---|---|---|
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# Contents

# 1 Working with Concrete

## 1.1 Background

1.1.1 The chemical reactions that enable fresh concrete to cure are complex. A by-product of these reactions is the production of calcium hydroxide, a highly alkaline chemical that has a pH in excess of 12.

1.1.2 There are a number of sources of alkaline water on construction sites, which include:

- Concrete wash water from cleaning of machinery and tools used with fresh concrete – e.g. chutes, drums, pumps, hand tools
- Cutting or coring of concrete structures
- Hydro-demolition (high pressure water cutting)
- Surface water runoff from newly concreted areas
- The storage or use of Concrete Bound Sand (CBS) in backfilling of cable works
- Leaching form installed cabling works utilising CBS backfill
- Crushed demolition materials, and
- Concrete installed below groundwater level (e.g. piled foundations)

1.1.3 The release of untreated highly alkaline water into the environment from any of the sources described above, can have a significant environmental impact, including on the ecology of receiving waters. The following are potential impacts of concrete and cement born contamination if not properly treated:

- Increase in pH of the water environment to toxic levels
- Kill invertebrate and other aquatic life including plants
- Particles can impact the turbidity of receiving waters
- Smother the bed and kill aquatic life
- Block gills of fish
- Impact directly and indirectly protected species which may be present e.g. otters, freshwater pearl mussels, or salmon
- Increase flood risk or agricultural drainage by blocking of drains and other structures

## 1.2 Legislation

1.2.1 Under the Controlled Activities Regulations, it is on offence to discharge polluting substances to controlled waters (surface water and groundwater) without prior approval from the Regulator (SEPA). This includes any discharge of concrete/ cementitious materials or contaminated water.

# 2 General Compliance Requirements

## 2.1 General use

2.1.1 Concrete shall not be used within 10m of any watercourse or loch. Should there be the requirement to use concrete and cement within 10m of a waterbody, this should be fully risk assessed and agreed in advance of the works.

2.1.2 Store bulk and bagged cement and concrete additives at least 30 metres away from watercourses, gullies and drains in properly secured, covered and bunded areas.

2.1.3 Ensure dust from storage areas is controlled.

2.1.4 Ensure all staff are briefed on the potential environmental risks of working with concrete.

2.1.5 Ensure that any residue from cutting/ coring/ hydro-demolition activities is correctly contained and treated where necessary.

2.1.6 Consider the materials being used e.g. recycled concrete aggregate may cause elevated pH levels as a result of run-off.

2.1.7 Recirculating systems should be used where possible to minimise the use of water resources.

## 2.2 Washout

2.2.1 Areas should be established for concrete washout which avoid important habitats and species.

2.2.2 Surplus concrete should be removed from equipment by scraping before washing down in order to minimise the volume of water required.

2.2.3 All concrete wash water should be contained for treatment on site or disposal off site. None shall be allowed to enter any drains, ditches or watercourses or land.

2.2.4 Discharge of small volumes to land should only take place where there is no connectivity to surface and ground waters and can be demonstrated to be fully compliant with legislative requirements.

## 2.3 Treatment Options on site

2.3.1 The pH scale is a logarithmic scale which means that each unit change in pH for example pH 7 to 8 represents a tenfold increase in alkalinity. Because of this, attempting to treat concrete washout by dilution alone has the potential to increase the risk of a serious pollution incident.

2.3.2 Dilution of high pH water is ineffective due to the logarithmic scale of pH. (For example, to dilute one IBC of concrete wash water at pH 12, the equivalent of four Olympic swimming pools of fresh water would be needed to bring it back to neutral (pH 7).

2.3.3 In order to adjust high pH wash water in line with acceptable levels, a process of neutralisation using controlled amounts of reagent may be required. Typical reagents include mineral acid (either sulphuric or hydrochloric acid), citric acid, carbon dioxide ($CO_2$) and self-buffering solutions. Propriety units for treatment of high pH water on site are available, some of which use $CO_2$ diffusers to neutralise the high pH water.

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Scottish & Southern Electricity Networks

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Environmental

# General Environmental Management Plan (GEMP)

## - Oil Storage and Refuelling

| | Name | Title |
|---|---|---|
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# Contents

# 1 Introduction

1.1 Oil and fuel inappropriately used, stored or disposed of can give rise to pollution of the environment.

1.2 Oil and fuel can be released into the environment through:

- Spillages during delivery or use
- Spillages during refuelling operations
- Loss during attempted theft or vandalism
- Spillages from hose bursts
- Spillages from mechanical failure of plant and their components
- Inadequate or damaged storage facilities, or
- Being poured directly to drains or gullies or being burned

1.3 Petrol, diesel and oil are all highly harmful to plants, animals and humans. If pollution is caused, prosecution may follow. The resultant cost of clean-up and legal proceedings following an incident is likely to far exceed the cost of putting proper control measures in place.

# 2 Legislation

2.1 The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) apply to any kind of oil including petrol, diesel, mineral oil, heating oil, lubricating oil, waste oil, vegetable and plant oil (except uncut bitumen) stored above ground at premises such as construction sites.

2.2 The relevant provisions of Waste Management Licensing Regulations 1994 (as amended) also apply to handling and storage of waste oil.

2.3 The carriage of diesel, kerosene and petrol by road is regulated by The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG 2009), as amended.

# 3 General Compliance Requirements

## 3.1 General

3.1.1 Compile a protocol for oil and fuel storage & operations on site, including but not limited to, bulk fuel delivery procedure, refuelling procedure, fuel storage inspections (including spill kit & plant nappy provision and condition) & emergency response procedures.

3.1.2 All those undertaking or involved in refuelling operations should be nominated on the project as Refuelling Marshals and trained in the approved refuelling procedure.

3.1.3 Suitably sized and fully stocked spill kits of the appropriate type are to be located and maintained at all oil & fuel storage locations, refuelling locations and in all site vehicles. Plant nappies must also be available at all refuelling locations for use during refuelling procedure.

3.1.4 Used spill kit materials should be removed as Special Waste. Stocks of spares are required to be held on site to ensure restocking and replacement can occur in a timely manner.

3.1.5 Where a plant nappy is of two part design the use of plant nappy liners without plant nappy base, or plant nappy base without liner is not acceptable as their performance will be compromised.

3.1.6 All oil loss events such as spillages, hose bursts etc must be reported in line with Scottish and Southern Electricity Networks (SSEN) reporting procedures.

## 3.2 Deliveries & Storage

3.2.1 Oil and fuel storage areas should be clearly designated and shown on site layout and drainage plans clearly presented on site and briefed during site inductions. Tool Box Talks are to be used to communicate changes and periodically remind operatives on oil and fuel storage, refuelling procedures and emergency response requirements.

3.2.2 During delivery of fuel or oils by a supplier to site, the delivery vehicle must be supervised by a suitably trained Refuelling Marshal when on site. Volume and type of fuels delivered and stored on site should be recorded along with dates of delivery.

3.2.3 The following will be considered as a minimum when identifying the location for fuel storage:

- Maintaining a minimum of 30m from sensitive environmental receptors such as surface waters, surface drainage systems, wetlands, Groundwater Dependent Terrestrial Ecosystems (GWDTEs), drinking water or private water supply catchments
- Fuel stores must be sited away from where they could be hit by moving vehicles and plant whilst ensuring ease of access to proposed storage area for oil deliveries / refuelling
- Ensuring suitability of ground conditions e.g. can the area be protected against flood damage / inundation / subsidence
- Use existing oil interceptor facilities, bunded storage areas or suitable areas of hardstanding , and
- Locate areas to prevent risk of theft or vandalism

3.2.4 Clear signage should be provided at oil storage areas and designated fuelling areas.

3.2.5 Clearly identify any areas where fuelling or fuel storage is not permitted on site plans (e.g. within close proximity to watercourses). Where appropriate consider additional signage highlighting and defining exclusion zones.

## 3.3 Fuel and Oil Storage Containers

3.3.1 All fuel or oil storage containers must:

- Adhere to all and any conditions of the Controlled Activities Regulations (CAR)
- Be of suitable type for that fuel or oil
- Be appropriately labelled identifying the contents
- Be of enough strength and structural integrity to ensure that it is unlikely to burst or leak in its ordinary use
- Be maintained in good condition
- Not filled beyond design capacity
- Be impermeable to oil or water, and
- Positioned, or other steps taken to minimise any risk of damage by impact so far as reasonably practicable

3.3.2 Storage of fuel within 50 gallon/ 200 litre drums is not permitted on site. Where waste oil is stored in this equipment it should be for minimal duration and the drum should be placed within a suitably sized bund.

3.3.3 For fuel storage containers of 200 litres or greater these must be checked for compliance with General Binding Rule 28 of the Controlled Activity Regulations.

3.3.4 Secondary containment or bunds are required where storage of oil or fuel is within containers over 200 litres. This secondary containment must be checked and maintained regularly, with any liquid or materials within emptied/ removed and suitably disposed of to retain required volume.

3.3.5 The storage of oil or fuel in a portable container with a capacity of less than 200 litres must:

- Be securely sealed when not in use so as to contain the fuel in event of tipping of the container
- Be secured during transit within a vehicle so as not to slide, tip or otherwise be put at risk of damage
- Where being stored for any period longer than a day between use, be placed within suitable bunded Control of Substances Hazardous to Health (COSHH) containment when not in use, and
- When not stored within a bunded COSHH container, the container should be stored securely on a plant nappy, away from any sensitive receptors such as watercourses

## 3.4 Refuelling

3.4.1 The following must be adhered to for refuelling operations:

- Refuelling operations are to be included within the preparation of a protocol for oil and fuel storage & operations on site

- Undertake refuelling at appropriately sited and set up designated refuelling bays
- Where this is not possible for operational reasons, refuelling should not be undertaken within 30m of surface waters and should follow the above guidance regarding location of any fuel related activities
- Suitably sized spill kits must be easily accessible for all re-fuelling operations and drip trays / plant nappies used during refuelling operations to catch drips and splashes

## 3.5 Construction plant

3.5.1 Plant nappies should be placed under stationary plant and equipment such as oil powered pumps, generators, winches, hydraulic presses, compressors, lighting rigs (where these items are not "integrally bunded"). Hydraulic powered plant such as presses, winches or tensioners may require additional mitigation such as further plant nappies or impervious drip trays.

3.5.2 Whilst plant nappies do not provide significant containment capacity, they are easier to manage than impervious drip trays which require increased maintenance to ensure rain water is not contaminated and require to be regularly emptied of rainwater to ensure effectiveness.

3.5.3 Static plant should be located at least 30m from any watercourse (or other identified sensitive receptor). Where it is not possible, mitigation should be put in place to reduce the risk or impacts of a pollution incident occurring (including additional capture methods for losses, increased inspection visits of the plant or placement of oil booms).

3.5.4 Plant nappies are to be placed under mobile plant on site when parked up, for example during breaks, overnight or longer periods. A plant nappy will be assigned to each piece of plant and placed under the area of the plant considered the greatest risk, for example this may be under the engine bay (if unbunded) or under the hydraulic pumps or flexi hoses. Stones maybe placed on the plant nappy to prevent it being blown away in strong winds.

3.5.5 Plant nappies should be regularly inspected as part of plant pre-use checks and during other site inspections and should be replaced (or their liners replaced) when deterioration and/ or contamination is evident.

## 3.6 Further information

3.6.1 Further information is available from (but not limited to):

- SEPA The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended) - A Practical Guide
- CIRIA (2005) C650 - Environmental Good Practice – site guide
- CIRIA (2006) C648 - Control of water pollution from linear construction sites – Technical Guidance
- https://www.hse.gov.uk/cdg/commonproblems/bowsers.htm

- https://www.gov.uk/government/publications/carriage-of-dangerous-goods-guidance-note-23

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Environmental

# General Environmental Management Plan (GEMP)

## - Waste Management

| | Name | Title |
|---|---|---|
| Author | Dan Thomas | Environmental Project Manager |
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| Approved by | Richard Baldwin | Head of Delivery |

# Contents

# 1 Introduction

1.1 Waste is defined in the in the Waste Framework Directive (75/442/EEC) as "any substance or object which the holder discards, intends to discard or is required to discard". This includes materials that other people want, or for which they can find a beneficial use i.e. material that is to be recovered / recycled.

1.2 In any construction project, there may be a variety of different wastes, from office and canteen waste to construction materials, waste aggregate from temporary tracks, waste oils, asbestos and clinical waste that will require management.

# 2 Legislation

2.1 Waste legislation and guidance is extensive, complex and works must comply with all the obligations they impose. Key guidance from the Scottish Environment Protection Agency (SEPA), can be found on their waste website (www.sepa.org.uk/regulations/waste). This includes information on core legislation including:

- Environmental Protection Act 1990 (as amended)
- Waste Management Licensing (Scotland) Regulations 2011 (as amended)
- The Waste (Scotland) Regulations 2012 (as amended)

# 3 General Compliance Requirements

## 3.1 Principles of Waste Management

3.1.1 Waste management priorities and practical actions that can be undertaken on site should follow the principles of the waste hierarchy as illustrated below:

- Eliminate - Design out waste
- Reduce - Minimise waste generation
- Reuse - Reuse materials on site if possible
- Recycle - Reprocess materials for off-site use
- Recover - Recovery of energy from waste sent off site
- Dispose - Least desirable option – last resort

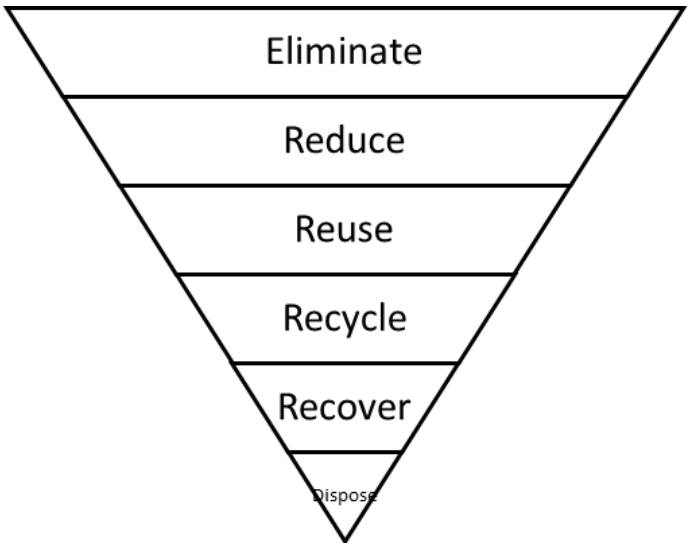


Figure 3.1 – Waste Hierarchy

3.1.2 A Site Waste Management Plan (SWMP) is required to be prepared agreed prior to construction works starting. This plan should be based on the above principles and include the following minimum requirements:

- Waste minimisation;
- Allocate a waste champion – who is responsible for the SWMP;
- Record types and quantities of waste that will be produced during the project;
- Decide how waste arising will be managed in line with the waste hierarchy;
- Plan for efficient materials and waste handling and set reduction targets (KPIs);
- Measure quantities and types of waste produced and compare against targets;
- Monitor the implementation of the SWMP and update as necessary; and
- Compile a waste budget.

## 3.2 Duty of Care

3.2.1 All those who produce or handle waste have legal responsibilities, a “Duty of Care”, for its safe keeping, transport and subsequent recovery or disposal.

3.2.2 Failure to comply the “Duty of Care” is an offence as it is a legal requirement under Section 34 of the Environmental Protection Act 1990 (as amended).

3.2.3 ‘Duty of Care’ requires the producer to:

- Ensure those transporting waste are registered with SEPA;
- Ensure the waste is being treated, re-used or disposed of at a suitably licensed site in line with current legislation;
- Keep a waste transfer slip for all waste being transported off site;
- Ensure that all waste on site is properly stored and secured;

- Take all reasonable steps to prevent unauthorised handling or disposal by others;
- If you are dealing with hazardous / special wastes, such as asbestos, chemicals, oils or contaminated soils, you have extra legal responsibilities and may be required to complete detailed 'special waste consignment notes'; and
- Should there be uncertainty over whether a waste is hazardous or special, advice should be sought.

## 3.3 Storage

3.3.1 The site should be kept tidy and free from litter at all times.

3.3.2 Segregation of waste (including metal, plastic, glass, paper and card) at the point of generation should be provided for site offices / welfare facilities and for construction activities by the use of designated storage areas / containers to ensure cross-contamination is reduced.

3.3.3 All storage areas / containers should be clearly labelled to identify the waste type and properties.

3.3.4 Waste storage areas should be appropriately secured to ensure to prevent pollution.

3.3.5 Controls should be in place to prevent wind blow (e.g. covered skips).

3.3.6 All wastes that could leach or be entrained in water should be stored in a sealed container or on an impervious surface with barriers to lateral flow.

3.3.7 Storage of liquid wastes should be stored in a sealed container within a secondary containment system (bund) with 110% capacity of the container.

3.3.8 Keep the duration of storage to the minimum required.

## 3.4 Special Waste Storage

3.4.1 Containers used for storage of special waste should be inspected weekly for leaks and corrosion.

3.4.2 Take care to separate different types of special waste, e.g. different chemicals that, if mixed, could react.

3.4.3 Written instructions should be available on site for storing and disposing of each type of special waste.

3.4.4 An inventory should be maintained of all special wastes stored on site, detailing quantities and locations.

## 3.5 Movement

3.5.1 All movement of waste should be undertaken in line with the relevant waste regulations.

3.5.2 Any waste being transported off site should be done so by a registered waste carrier.

3.5.3 A waste transfer note / special waste consignment note should be completed and retained prior to waste leaving the site.

3.5.4 Before waste is allowed to leave site, the producer should ensure that the site it is being transported to is appropriately licensed.

3.5.5 Vehicles transporting waste should be suitably secured so as not to allow waste to escape.

### 3.6 Reuse, Treatment, Disposal

3.6.1 All re-use, treatment and disposal of waste must be undertaken in line with an appropriate waste management licence (WML) or an exemption to require a waste management licence (WMX), under the Waste Management Licensing (Scotland) Regulations 2011 (as amended).

3.6.2 If it can be proven that the material is not waste, it will not fall within these requirements.

3.6.3 A WML and WMX must be obtained from SEPA prior to undertaking the activity.

3.6.4 No burning of waste is permitted on site.

3.6.5 No fly-tipping is permitted.

## 4 Further information

4.1.1 Some useful sites on waste management are:

- www.sepa.org.uk
- www.zerowastescotland.org.uk
- www.wrap.org.uk
- www.bre.co.uk
- www.smartwaste.co.uk
- www.ciria.org.uk
- www.netregs.org.uk

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Environmental

# General Environmental Management Plan (GEMP)

## - Soil Management

| | Name | Title |
|---|---|---|
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| Checked by | Simon Hall | Environmental Project Manager |
| Approved by | Richard Baldwin | Head of Delivery |

# Contents

# 1 Introduction

1.1 Soil is a precious resource and can provide the following functions:

- Supports a diverse ecological system and provide the growing medium for crops and timber;
- Provides a carbon sink and plays an important role in carbon sequestration;
- Absorbs rainfall, delaying its movement into watercourses;
- Filters or transforms chemicals that pass through it, preventing them from ending up in water or air.

1.2 Any damage to soil quality affects the long-term functioning of the soils and has an impact not only on ecological diversity, performance and visual amenity, but can have impacts off-site such as on flooding, aquifer recharge and water quality.

1.3 It is therefore essential that impacts to the resource are reduced to the minimum necessary for the works and that all work is undertaken in accordance with best practice. The methods of stripping, storage, reuse and disposal of soil can have significant impacts on both the soil resource and other environmental receptors.

# 2 General Compliance Requirements

## 2.1 General Principles of Soil Management Process

2.1.1 All stripping should follow this process, except in agricultural fields whereby the method should be informed by landowner requirements, or where archaeological concerns exist and smooth buckets maybe preferable:

- Turfs stripped to 300mm using large toothed bucket;
- Turfs stored vegetation side up and watered if drying out;
- Any remaining top soil and all subsoil layers to be removed and stored separately;
- Subsoil, topsoil and turfs replaced in same order as removed;
- Turfs reinstated vegetation side up;
- The toothed bucket should not be used to smooth over the excavation as it results in greater initial damage and slower recovery of the vegetation.

## 2.2 Stripping

2.2.1 Plan soil stripping carefully in advance.

2.2.2 Check whether the project archaeologist should be on site during the soil stripping.

2.2.3 Check all necessary pre-construction surveys have been completed prior to stripping (e.g. preconstruction protected species surveys in line with Species Protection Plans).

2.2.4 Follow all identified mitigation requirements for the location and method of stripping.

2.2.5 Where possible, strip soil during drier periods. Do not strip soil during periods of very heavy rainfall.

## 2.3 Storage

2.3.1 Topsoil should be stripped and stored within the pre-identified and agreed areas to ensure safe storage and swift and successful reinstatement.

2.3.2 If soil storage is being carried out on sensitive habitats, consideration should be given to storage on top of a geotextile mat with duration of storage minimised.

2.3.3 Topsoil must not be mixed with subsoil or other layers with a requirement for separate storage areas for each.

2.3.4 Record and 'signpost' where all removed soils are stored including the different subsoil layers (this is important as individual subsoil layers should be reinstated in the order in which they were removed).

2.3.5 If the storage is likely to be for an extended period (for example >6 months) it may be appropriate to store topsoil layered on top of subsoil bunds. Underlying turfs (and topsoil) at the storage location should be removed in advance with turfs stored on surface of the bund.

2.3.6 Soil storage areas should be located away from watercourses (minimum 10m) and protected from run-off from adjacent areas.

2.3.7 Storage bunds should be designed so the material is stable and unlikely to slip, slide or slump. Consider the risk of any adjoining topography, (e.g. avoiding storing soils near steep slopes or banks, or in areas at high risk of flooding.

2.3.8 Best practice should be applied in order to minimise the amount of compaction or other disturbance of the general structure of the superficial deposits.

2.3.9 Other site works should not impact on stored soil (e.g. Construction traffic must not track over stored soils).

2.3.10 Careful planning of storage areas and required works must be undertaken to avoid multiple handling of stored material and moving of stockpiles.

2.3.11 The surface of material storage bunds (not turfed as detailed above) can be smoothed with bucket to aid surface water run off to reduce potential for erosion. If significant soil erosion is occurring from storage piles during periods of heavy rain, consideration should be given to covering the stockpiles, with terram or other suitable material.

2.3.12 In periods of dry weather check the need for dampening down to reduce dust and potential nuisance.

2.3.13 If any stored soil is contaminated it should be managed in accordance with the Contaminated Land GEMP.

2.3.14 After removal of stored material, storage areas should be reinstated to the pre-existing condition.

## 2.4 Reinstatement

2.4.1 Stripped soil should be reinstated as close to where it was removed as possible. This will help to maintain a local seed base and the local geological/ hydrological characteristics.

2.4.2 Unless otherwise agreed, turfs should be reinstated following the works and orientated vegetation side up.

2.4.3 Where turfs are not available, areas would be left to revegetate naturally unless circumstances require otherwise, or vegetation is unlikely to establish within a reasonable timescale. Any seeding or replanting must be agreed in advance, including details of seed mixes and management regimes. Other techniques maybe more appropriate depending on the habitat to be reinstated.

2.4.4 The reinstatement of the construction area is to be undertaken to a high standard, using the existing soil and vegetation material wherever possible, in accordance with best practice.

# 3 Revision History

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Scottish & Southern Electricity Networks

TG-NET-ENV-523

Environmental

# General Environmental Management Plan (GEMP)

## - Bad Weather

| | Name | Title |
|---|---|---|
| Author | Dan Thomas | Environmental Project Manager |
| Checked by | Simon Hall | Environmental Project Manager |
| Approved by | Richard Baldwin | Head of Delivery |

# Contents

# 1 Introduction

1.1 It is important to consider the implications of poor weather conditions and associated environmental risks.

1.2 Bad weather, particularly heavy rain, can increase the risk of significant environmental impacts during construction (for example, on sensitive habitats and increased risk of sediment laden run-off into surface waters).

1.3 Storm events can also impact oil storage areas and increase the risk of a loss of oil to the environment.

# 2 General Compliance Requirements

## 2.1 General

2.1.1 Identify an action plan before construction starts that identifies measures to implement in times of extreme weather. This should include heavy rain, high winds, heavy snow, prolonged freezing condition and periods of dry weather.

2.1.2 The weather forecast should be checked daily and changes to work activities or mitigation requirements implemented on an ongoing basis.

2.1.3 Identify and communicate any areas of flood risk. SEPA flood mapping can assist in this but should not be the sole information used in any risk assessment.

2.1.4 Ground conditions should be checked regularly, and assessment made as to whether they are suitable for the proposed site activities.

2.1.5 Check whether plant is causing damage on site because of poor ground conditions exacerbated by bad weather.

2.1.6 Plan for high run-off in advance and Identify protection measures (silt traps, straw bales and booms etc.).

2.1.7 Check for any materials stored close to watercourses during construction activities which could be washed into the water in times of storm.

2.1.8 During times of excessive rainfall and ground saturation, stripping and reinstatement works should not be undertaken.

2.1.9 Check any containment bunds (oil storage, concrete washout etc) have the appropriate capacity and empty if necessary, to prevent any un-controlled discharge.

2.1.10 Ensure all skips and waste containers are covered / closed to minimise water ingress.

2.1.11 Emergency response plans should take account of bad weather.

2.1.12 Consider the use of a visual display board which can be used to alert site staff to the expected weather and the necessary preparations that are required.

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Scottish & Southern Electricity Networks

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Environmental

# General Environmental Management Plan (GEMP)

## - Dust Management

| | Name | Title |
|---|---|---|
| Author | Dan Thomas | Environmental Project Manager |
| Checked by | Simon Hall | Environmental Project Manager |
| Approved by | Richard Baldwin | Head of Delivery |

# Contents

# 1 Introduction

1.1 There are many potential sources of dust from a construction site which need to be closely managed on an ongoing basis to ensure it is adequately controlled on site. Likely sources of dust include:

- Haul roads and access tracks;
- Yards and storage areas;
- Soil storage areas;
- Construction corridor (exposed areas following stripping);
- Material transportation;
- Transport of mud onto the public highway;
- Loading and unloading materials;
- Quarrying or blasting activities;
- Crushing / screening activities;
- Stone breaking;
- Concrete or stone cutting.

1.2 Once dust particles are airborne, it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is to control dust at source and prevent it from becoming airborne.

# 2 Legislation

2.1 In the event of dust becoming an issue there is potential for enforcement action from the Scottish Environment Protection Agency (SEPA) or the local authority. There is also the potential for legal action, which will have cost, programme and reputation implications.

2.2 Likely actions and implications include:

- Health and & Safety implications for operatives on site and wider public;
- Nuisance to neighbours and bad publicity for the site;
- Abatement notice or enforcement action from regulators;
- Impact on project programme and budget (e.g. compliance with statutory notices relating to dust levels / abatement notices);
- Under the Clean Air Act 1993 and Part 3 of the Environmental Protection Act 1990, local authorities can impose limits on dust generated from a site;
- Impacts on ecology (e.g. impacting on plant growth, smothering of habitats, watercourse pollution, local pH changes etc);
- Claims from farmers for dust damage to crops.

# 3 General Compliance Requirements

## 3.1 Planning the Works

3.1.1 Where Dust has the potential to become an issue, a protection plan should be developed.

3.1.2 Likely sources of dust should be identified ahead of works and appropriate mitigation measures put in place to minimise the risk of dust become an issue.

3.1.3 Nearby potential receptors such as residential dwellings or sensitive habitats should be identified, and the works planned minimise the risk of dust impacting on these, with the adoption of up-front appropriate mitigation measures.

3.1.4 Contingency measures should be put in place to enable a prompt, efficient and legally compliant response in the event of dust becoming an issue.

## 3.2 Avoiding Dust Generating Activities

3.2.1 Plan activities to ensure that, as far as practical, particularly dusty activities are not carried out in unsuitable weather conditions (i.e. very dry / windy conditions) unless suppression is in place.

3.2.2 Store materials away from the site boundary.

3.2.3 Limit vehicle speeds along stone access tracks.

3.2.4 Vehicles carrying bulk materials should be sheeted if could give rise to dust.

3.2.5 Keep height of soil stockpiles to a minimum and gently grade the side slopes.

3.2.6 Minimise the height of fall of materials.

3.2.7 Reduce the height that materials are unloaded from.

3.2.8 Mud should not be deposited on roads. Where applicable, wheel cleaning facilities will be provided prior to vehicles leaving site.

3.2.9 Keep all public roads well swept and bowse if required. Ensure a road sweeper can be commissioned locally to the site in the event of an issue arising.

3.2.10 Do not use drills that are powered by compressed air unless appropriate control measures are in place.

3.2.11 Ensure any tools or plant which have facilities for dust suppression utilise this function.

## 3.3 Management and Mitigation

3.3.1 Inspect high risk areas daily, especially during dry weather.

- Suppress dust from soil stockpiles, haul roads, stripped working corridors and material storage areas, by bowsing with water, where required;
- Ensure the relevant permissions and consents have been obtained for water used for suppression activities (e.g. CAR authorisation from SEPA or Standpipe licence from Scottish Water);

- Ensure efficient use of water to dampen down dust (e.g. use of diffusers to suppress wide areas with a spray/mist rather than a standard hosepipe arrangement);
- Any run-off from dust suppression activities shall be controlled in line with best practice to avoid creating sediment contaminated run off;
- Communicate dust management procedures to all relevant personnel and provide suitable training if required;
- Follow-up any complaints immediately and take action to avoid a repeat complaint.

3.3.2 Further information available in:

- BRE (2003) Control of dust from construction and demolition activities;
- DETR (2000) Environmental handbook for building and civil engineering projects;
- CIRIA (2005) Environmental Good Practice – site guide.

# 4 Revision History

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