Environmental Risk Assessment

Mack Contracts Ltd

Wallsend Research Station

Davy Bank

Wallsend

NE28

Olive Compliance Ltd, Street, Ponteland, Newcastle upon Tyne, NE20 9NH

Info@Olivecompliance.com

BASIS OF REPORT

This report has been prepared by Olive Compliance Ltd with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use Mack Contracts Ltd; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from Olive Compliance Ltd.

Olive Compliance Ltd disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

Information reported herein may be based on the interpretation of public domain data collected by Olive Compliance Ltd, and/or information supplied by the Client and/or its other advisors and associates. This data has been accepted in good faith as being accurate and valid.

The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in Olive Compliance Ltd unless the terms of appointment state otherwise.

CONTENTS

REFERENCED DRAWINGS

Drawing 001	**Site Location Plan**
Drawing 002	**Permitted Area**
Drawing 003	**Site Layout Plan**
Drawing 004	**Receptor Map**

DOCUMENT REFERENCES

TABLES

1.0 Introduction

Olive Compliance Ltd (OCL) has been instructed by Mack Contracts Ltd (Mack) to prepare an Environmental Risk Assessment (ERA) in support of an application for a Bespoke Environmental Permit (EP) for the Wallsend Research Station, Wallsend Facility.

This ERA has been undertaken in accordance with the Environment Agency (EA) *Risk assessments for your environmental permit*[1] (2016) and is a simple assessment of the risks to the environment and human health from accidents, noise and fugitive emissions that may be associated with the proposed operations at the site.

The aim of the assessment is to identify any significant risks and demonstrate that the risk of pollution or harm will be acceptable by taking the appropriate measures to manage these risks.

The above guidance requires all receptors that are near the site and could reasonably be affected by the proposed activities to be identified and considered as part of the ERA

[1] https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit

2.0 Site Setting and Receptors

2.1 Site Setting

The site (centred at NGR NZ30743 66029) is located at:

Wallsend Research Station
Davy Bank
Wallsend
North Tyneside
NE28 6UZ

The Property is located in an Industrial Estate.

The site location on Drawings 001 and Permitted area Drawings 002 and site layout on Drawings 003.
Drawing 005 The site receptor plan
The site has no formal drainage.

A summary of the immediate environmental site setting is provided in Table 2-1 below.

Table 2-1
Surrounding Land Uses

Boundary	Description
North	Commercial/Industrial /Residential
East	Commercial/Industrial
South	Commercial/Industrial /River Tyne
West	Commercial/Industrial

2.1.1 Water courses

The nearest surface water feature is the Tyne river located approximately 25m South of the site boundary at its closest point. There is no direct discharge into the River Tyne from the site. There is another company called SMD who have land between the River Tyne and the site

2.1.2 Flood Risk Zone

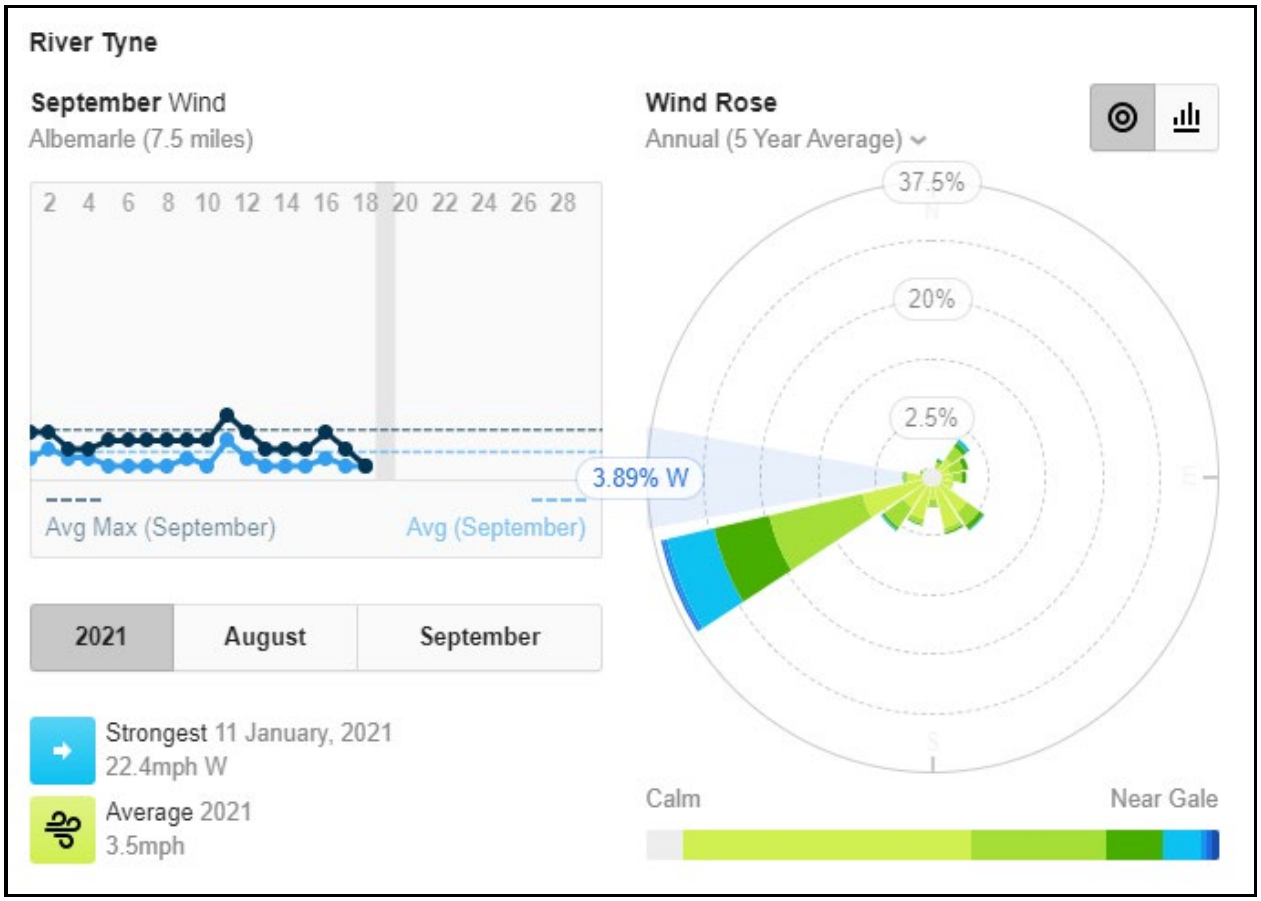
According to the Environment Agency Flood Map the Site is located in flood zone 1, an area with a low probability of flooding.

2.1.3 Prevailing Wind Direction.

The Willy Weather[2] Wind Data Archive data for the closest weather station (Blaydon Bridge) shown indicates the distribution of wind power by direction over the previous 5 year average.

Upon review of this data the prevailing wind directions are predominately westerly (W) in respect of the site. See figure 2 below.

Figure 2



2.1.4 Transport Infrastructure

The Property is situated on Davy Bank Industrial Estate accessed from A187 Hadrian Road.

The site is accessed off Davy Bank by a service road which runs through the yard to the rear area of the industrial unit. As you enter the curtilage of the industrial unit situated to the left of the site entrance Mack Contracts Ltd and car park area.

[2] River Tyne - Wind Forecast, Tyne and Wear - WillyWeather accessed Sep2021

2.1.5 Public Footpaths, Recreational areas and Areas for Public Use (Open Space)

There is the Hadrian Wall Footpath/Cycleway 215m to the North of the site at the top of a hill.

2.1.6 Other receptors

European/International Sites

None Listed

Other receptors

- Nature and heritage conservation sites - None Listed
- Local Nature Reserves Sites

Location from site	Name	Data source	Designation
25m	Tyne Foreshore	Northumbria WLT	LWS

- Protected Habitats: None within 1km of the site
- There are no registered parks or gardens are located within 1km of the site.

2.1.7 Geology, Hydrogeology & Hydrology

Artificial Ground

Concrete / Made ground of dense fragmented brick gravel and ash, as noted on BH date from BGS data

Bedrock Geology

Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone. Sedimentary Bedrock formed approximately 310 to 318 million years ago in the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas.

Superficial Geology

Made ground underlain by by sandy gravel. Formed up to 2 million years ago in the Period. Local environment previously dominated by no interpretation of the environment of deposition.

2.1.8 Hydrogeology

- *Groundwater Vulnerability*

The MAGIC search shows the groundwater vulnerability to contamination as low. BGS data from BH logs at Davey Bank show water strike at 3m below ground level.

- *Discharges to Groundwater*

No discharges to groundwater are listed within 500 m of the Site.

- *Groundwater Abstractions*

No groundwater abstractions are listed within 500 m of the Site.

- ***Groundwater Flooding***

The Environment Agency Flood risk search for the site is listed as having a low flooding potential. Therefore the site has limited potential for groundwater flooding to occur.

2.1.9 Historical Land Use

- **Information Sources**

It is clear from past land use the area had high industrial use and was associated with ship building in the area. Google searches have shown that the site was used after the war to build and design boilers for the shipping industry. It was then referred to as having been a ship building yard as Ryton Marine, Davey Bank, Wallsend. Ryton Engineering Ltd purchased the existing boat building yard of RD Lambie at Davey Bank, Wallsend, in 1972. There is a high probability that residual pollution from past use will be present in the area.

The Environment Agency have listings of the site being used as a waste management facility Operator - Graham Brown, Holystone Waste Management, Impetus Waste Management were the last operators of the yard area and also the adjacent cement bonded asbestos clad building (that is currently in use by a operator shredding wood).

2.1.10 Ecology

Search on Magic and EA Screening have not identified and specific Ecological features.

2.1.11 Cultural Heritage

- Scheduled Ancient Monument: The Roman Wall Segedunum Roman Museum is situated 615m North West of the site and the wall path is situated to the North of the site. Although not within 500m it is noted that this is of significant historical importance.

Searches on the MAGIC website[3] confirm that there are none of the following within 500m of the application site:

- National Trust Properties; and Protected Habitats:
- Registered Battlefields.

It is considered that the identified receptors cannot reasonably be expected to be affected by the activities proposed at the site.

2.1.12 Landfill

None Recorded

2.2 Receptors

Image 1 below show receptors that are potentially sensitive and could reasonably be affected by the site.

The below table shows the receptors that could potentially be affected, within 1km of the site boundary.

Image 1 – Please refer to Drawing 004 for Receptor Drawing

Receptor	Distance from Site	Direction
Residential		
Houses on Railway Terrace Davy Bank	250m	North east
Community Centres/Places of Worship		
St Peters Church	750m	North east
Retail		
Asda	600m	North west
Green Space/Sports		
Segedunum Roman Museum	615m	North west
Hadrian Wall Path	215m	North East
Hadrian Leisure Centre	815m	East
River Tyne foreshore LWS		
Industrial/Commercial		
Industrial Units	0-1km	East & West
Hadrian Rd Metro	600 m	East
Wood Recycling	0m	North
SMD	0m	To the East and South
Schools		
Wallsend CofE Primary School	684m	South East

2.3 Overview and Approach

This section outlines the procedure that has been followed in the undertaking of the ERA for the site. The results are presented, in accordance with the EA Guidance, in the tables presented in Section 3.2.

2.3.1 Identification of Hazards

The first step of an ERA is to consider and identify the risks posed to the environment by the activities proposed for a site.

The EA Guidance states that an operator must:

"*…identify whether any of the following risks could occur and what the environmental impact could be:*

- *any discharge, for example sewage or trade effluent to surface or groundwater*
- *accidents*
- *odour (not for standalone water discharge and groundwater activities)*
- *noise and vibration (not for standalone water discharge and groundwater activities)*

- *uncontrolled or unintended ('fugitive') emissions, for which risks include dust, litter, pests and pollutants that shouldn't be in the discharge*
- *visible emissions, eg smoke or visible plumes*."

2.3.2 Identification of Receptors

Section 2 of this document describes the site setting and the land uses in the vicinity of the proposed site. This information has been used in order to focus on the main receptors that could be potentially at risk from the activities of the site.

Using the information gathered from the stated sources, the receptors considered for assessment within the ERA are defined in Table 2-2.

In accordance with the EA Guidance, Drawing 004 presents a map showing the location of the site and the receptors considered within the ERA.

2.3.3 Identification of Potential Pathways

For each of the identified hazards for operation of the site, the ERA has considered that pathways through which each hazard may impact on a sensitive receptor. Where such pathways exist, the risks of potentially significant impacts have been assessed in accordance with Sections 3.1.4 and 3.1.5 (below) and the full details are included in the tables in Section 3.2.

Where no pathway exists between an identified hazard and an identified receptor, the associated risks are not considered further within the ERA and are, thus, not included in Section 3.2.

2.3.4 Assessment of Risks

The EA Guidance states that the nature of the ERA will be influenced by the type of activity (or activities) that are proposed for a site. For installations/waste operations, the ERA is required to consider, "*…one or more of the following, depending on the substances you discharge and where they're discharged to:*

- *assess the risks of your air emissions*
- *calculate the global warming impact of your air emissions*
- *assess risks to groundwater*
- *assess risks to surface water from hazardous pollutants*
- *assess risks to surface water from sanitary and other pollutants*"

For installations and waste operations, an operator is also required to decide how to treat, recycle or dispose of waste. The ERA has therefore included consideration of the environmental impact of the ultimate fate of the materials that will be processed by the proposed activities of the site.

2.3.5 Controlling Risks

The EA Guidance states:

"*You'll need to show how you're managing any risks appropriately by controlling and monitoring your emissions and through your management system.*"

Where an ERA identifies risks that are potentially significant, the ERA is required to demonstrate how the risk of pollution or harm can be mitigated by measures to manage these risks. The approach undertaken to the implementation of management/mitigation measures, for this ERA, is (in order of preference):

- Avoidance / prevention;
- Minimisation / management;
- Mitigation; and
- Offset / compensation.

The following tables present the assessment in terms of hazards posed, receptors and pathways, along with management and residual risks for the following hazards:

- Odour;
- Noise and Vibration;
- Fugitive Emissions (including dust, mud, litter and pests); and
- Accidents.

Table 3-2 Odour Risk Assessment and Management Plan

What do you do that can harm and what could be harmed			**Managing the Risk**	**Assessing the Risk**		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	**What is the risk that still remains? The balance of probability and consequence**
Odours from the acceptance and storage of waste	*Site personnel and local human population*	Air	Inert soils & Stone unlikely to cause odour issues. Strict waste acceptance procedures will be adhered to, to ensure only permitted wastes are accepted on site. The site will be monitored for odours, if required, by site personnel throughout the working day. In the event that odours are detected, investigations will be undertaken to determine the cause and appropriate remedial action taken. In the event that odorous waste is delivered to site it will be segregated & removed at the earliest opportunity. The Site Manager will be responsible for implementing risk management measures.	Negligible	Odour nuisance and loss of amenity.	Not significant

Table 3-3 Noise Risk Assessment and Management Plan

What do you do that can harm and what could be harmed			**Managing the Risk**	**Assessing the Risk**		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	**What is the risk that still remains? The balance of probability and consequence**
Noise from vehicular movements (site access road and yard) Noise from operation of site plant.	*Site personnel and local human population* *Migrating birds*	Air.	The site is located within a mainly industrial area. The machinery/plant will only be operated within the permitted site opening hours which are 24hrs per day unless on a Bank Holiday when it is 07:00 – 17:00. The machinery/plant will typically be turned off when not in use. Waste treatment operations will generally be carried out in campaign periods when a mobile plant operator will attend site to crush/screen. All equipment will be maintained and operated in accordance with manufacturer's guidance and will be maintained in good working order. The site will be operated so as to minimise noise emissions from the site. Measures that will be taken at the site include: • locating plant away from noise-sensitive receptors where possible; • the avoidance of dropping materials from height; • switching plant off when not in use;	Mobile. Intermittent throughout the day. Low.	Noise nuisance and loss of amenity.	Not significant

			• the imposition of a speed limit for vehicles delivering waste to the site. This will reduce noise associated with high engine speeds; training of all personnel in the need to minimise site noise. All personnel are responsible for monitoring and reporting excessive noise when carrying out their everyday roles; • regular maintenance of site plant and machinery to minimise noise resulting from inefficient operation of pumps, generators and engines; • in the event that reversing alarms are found to give rise to complaints, alternative alarms or technology will be investigated; • regular maintenance of site surfaces to prevent the development of potholes. This will significantly reduce noise generated by vehicles, particularly empty vehicles exiting the site; • consideration will be given to the fitting of noise suppression kits on items of plant and equipment, if required; and • all plant will be maintained in accordance with manufacturer's recommendations to minimise noise emissions. Any noise complaint received will be logged in the site diary. The Site Manager will investigate the complaint and will take action to identify the source of the noise and implement remedial measures where appropriate depending on source identified. Hand help app devices to measure noise will be used periodically on site The measures employed at the site to minimise the emission of noise will be regularly reviewed by the Site Manager and additional measures will be employed where required. The procedure for managing complaints is included in the EMS.			

Table 3-4 Fugitive Emissions Risk Assessment and Management Plan

What do you do that can harm and what could be harmed			**Managing the Risk**	**Assessing the Risk**		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	**What is the risk that still remains? The balance of probability and consequence**
To Air:						
Dust from: Vehicle movements Waste storage and treatment Dusty wastes Waste deposition Waste surfaces	*Site personnel and local human population*	Air	DEMP (Dust & Emissions Management plan) in place. The requirements of the DEMP must be followed in order to manage emissions. Fencing/screening around site	low	Dust nuisance Harm to human health	Low
To Water						
Runoff from waste storage areas & site surfaces	Surface water: Groundwater within bedrock deposits.	Overland percolation through the ground	The site will consist of a waste acceptance and treatment concrete pad with sealed drainage. The concrete is laid to a will drain via a gully drain a low point in the site. There is no formal drainage on site. If too much surface water on site road sweeper is utilised to take water off site.	Low	Contamination of surface water and groundwater.	Not significant
Pests						
Birds, vermin and insects.	*Site personnel and local human population*	Via air (flies and birds) or over ground (vermin and birds).	Inert soils and stones unlikely to attract vermin etcThe facility will be inspected by both site management and operatives for infestations of pests, vermin and insects on a routine basis. A specialist pest control contractor will	Negligible	Nuisance, loss of amenity and harm to human health.	Not significant

			provide site pest management programes with at least monthly visits. Additional visits will be made as required. The management of pests is further detailed in EMS.			
Mud/Litter						
Litter from acceptance and storage of waste	*Local human population and wildlife.*	Airborne litter	Due to the acceptance of soil/stones is not anticipated that litter will pose a serious risk. However, the boundary of the site and its environs will be regularly visually inspected and any litter cleaned up. The site will benefit from a perimeter fence which will limit the potential for litter to escape off-site. It will be the responsibility of the site staff to monitor the site for any signs of escaping materials either from within the site or from vehicles delivering or removing materials to and from the site. Inspections will be carried out on a daily basis and a record maintained within the site diary. The management of litter is detailed further the EMS.	Low	Nuisance and loss of amenity	Not significant
Mud on roads	*Local human population*	Transferral of mud on vehicle wheels	The site is accessed off Davy Bank to its immediate northt. The site is fully surfaced with concrete and fully drained. It is therefore not expected that mud will feature as a problem on the site. The following measures will be taken to prevent the deposition or tracking of mud or debris from the site onto public areas or highways: site surfaces will be maintained free of significant quantities of mud and debris; all operational areas will be subject to monitoring by staff throughout the working day; and	Low	Mud on road, road traffic accidents.	Not significant

			all vehicles leaving operational areas will, before leaving the site, be checked to ensure that they are clear of loose waste and that any products being exported from the site are secure. In the event that mud, debris or waste arising from the site is deposited onto public areas outside the site, the following remedial measures will be implemented: the affected public areas outside the site will be cleaned; and traffic will be isolated from sources of mud and debris within the site to prevent further tracking of mud and debris, and measures will be taken to clear any such sources as soon as practicable.			

Table 3-5 Accidents Risk Assessment and Management Plan

What do you do that can harm and what could be harmed			**Managing the Risk**	**Assessing the Risk**		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	**What is the overall risk**
What has the potential to cause harm?	What is at risk what do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? – Who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	**What is the risk that still remains? The balance of probability and consequence**
Unauthorised waste	*Site personnel and local human population* *Local environment*	Via air (odours and dust) Overland (to sewer, surface water and groundwater)	Upon delivery waste will be subject to strict waste acceptance procedures to identify, reject and/or segregate potentially non-conforming waste. Only waste authorised by the permit will be accepted at the site. All wastes will be subject to inspection and checking against the declaration on the waste transfer documentation. In the event that unauthorised waste is delivered to the site, the waste will be reloaded onto the delivery vehicle for removal from site, or will be segregated and stored in a designated quarantine area prior to export from site. The waste acceptance procedures are included in the EMS. The Site Manager will be responsible for implementing risk management measures.	Low	Water contamination Odour and dust nuisance, loss of amenity	Not significant

Fire	*Site personnel and local human population* *Local environment*	Air, water runoff	Flammable wastes and incompatible materials will not be accepted at the site; the plant inspection schedule will include checks of electrical equipment within the site to ensure that any faults are identified and repaired; fire extinguishers will be provided at designated locations; smoking will not be permitted in operational areas of the site; working practices will ensure the assessment of fire hazards and training of employees in fire prevention, e.g. the use of fire extinguishers and emergency procedures; and no wastes will be burned on the site and any fire at the site will be treated as an emergency. In the event of a major fire, the following action will be taken: the Site Manager and Fire Brigade will be notified immediately and the Environment Agency as soon as practicable; the burning area will be isolated and attempts will be made to extinguish the fire utilising the onsite fire extinguishers, if safe to do so; and the site and buildings will be evacuated.	Low	Nuisance (smoke and fumes) and harm to human health. Water contamination (runoff)	Not significant
Spillage and Leakage	Local land quality, surface water and groundwater. *Site personnel, emergency services personnel and local human population*	Runoff and percolation through ground.	To prevent loss of containment and minimise the risk and impact of releases the following measures will be implemented:	Low	Contamination of groundwater and surface water. Harm to human health.	Not significant

		Direct exposure and transport via air	Containment system: any facilities for the storage of oils, fuels or chemicals will be sited above ground on impervious bases and surrounded by impervious bund walls. The volume of the bunded compound will be at least the equivalent to the capacity of the tank plus 10%. All filling points, vents and gauges will be located within the bund. Storage vessels: storage tanks will be constructed to the appropriate British Standard; Inspection: tanks will be inspected visually on a daily basis by site staff to ensure the continued integrity of the tanks, and identify the requirement for any remedial action; Spill kits: materials suitable for absorbing and containing minor spillages will be maintained on site; and Monitoring techniques: the site staff will undertake daily monitoring for evidence of spillage and leakage. In the event of any potentially polluting leak or spillage occurring on site, the following action will be taken: Minor spillages will be cleaned up immediately, using sand or proprietary absorbent. The resultant materials will be placed into containers and will then be removed from site and disposed of at a suitably permitted facility. The incident will be logged in the site diary. Any dry wastes spilled on site will be collected and transported to the appropriate area of the site.			

			In the event of a major spillage, which is causing or is likely to cause polluting emissions to the environment, immediate action will be taken to contain the spillage and prevent liquid from entering surface water or drains. The spillage will be cleared immediately and placed in containers for offsite disposal, and the Environment Agency will be informed. The spillage procedure, included in the EMS, provides further information with respect to spillages on site.			
Security and Vandalism	Personnel on site, emergency service workers.		The following security measures are in place: Site perimeter: the site benefits from a site agricultural fencing Security gates: the site entrance gate will be locked at all times when the facility is unattended and when the site is not in use; The site will be monitored by an external security company 24 hours via CCTV, motion detectors cameras.The cameras will notify specified managers via alerts to mobile phones outside of nomal working hrs. Inspection: gates and fencing extending around the site will be inspected regularly by the operations staff to identify deterioration and damage, and the need for any repairs;	Low	Nuisance and harm to human health. Contamination of land and surface water.	Not significant

			Maintenance and repair: fencing and gates will be maintained and repaired to ensure their continued integrity. In the event that damage is sustained repairs will be made by the end of the working day. If this is not possible, suitable measures will be taken to prevent any unauthorised access to the site and permanent repairs will be affected as soon as practicable; Authorised access system: all visitors to the site will be required to register in the visitor's book and sign out again on exit to minimise the risk of unauthorised visitors being present on site; and Monitoring techniques: operational procedures, including regular inspections, will ensure continual monitoring of security provision at the site. In the event of a breach of security at the site, the cause will be investigated and appropriate mitigation measures implemented. Records to be maintained include inspections and maintenance of security fencing and gates, breaches of security, investigations and actions taken.			
Flooding	*Site personnel and local human population* *Local environment*	Overland	There are no surface water features within the site boundary. According to the UK government Flood Map for Planning, the site lies within flood zone 1 and is unlikely to suffer flooding. Evacuation procedures will be implemented in the event of flooding.	Low	Inundation of site with flood water	Not significant