# ENVIRONMENTAL RISK ASSESSMENT (ERA)

**in regard to the**

# BRIAN ARMISTEAD Ltd. (SINKFALL RECYCLING) WASTE TRANSFER, COMPOSTING AND RECYCLING FACILITY

# at

# Sinkfall Farm Barrow-in-Furness

| Site Manager | Permit Number: | Principal Contacts |
|---|---|---|
| **Brian Armistead**<br>**Brian Armistead Ltd.**<br>**Sinkfall Farm**<br>**Rakesmoor Lane**<br>**Barrow-in-Furness**<br>**Cumbria LA14 4QE** | **PERMIT EPR/JP3693ZA/V005** | **Brian Armistead**<br>**Helen Stephens**<br>**Tony Layfield**<br>**Telephone: 01229 465000**<br>**Mobile: 07831 414569**<br><br>**Consultant/Assessor:**<br>**D J Baldwin Recogen Ltd**<br>**Mobile: 07785 352993** |

**Previous Review/Revision: 27/11/2017 Current Version: v2.3**
**Latest Review/Revision: 21/05/2024 Current Version: v2.4**

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# ERA REVISIONS REGISTER

| Date | Reference | Revision made |
|---|---|---|
| 4/11/2015 | Whole Document | Revised and Updated to Include the additional de-watering/ de-gritting processes |
| | | Risk Assessment revised, shows lower risks associated with fan suction aeration of compost. |
| 2016 | Permit Transfer | New Details |
| 22/01/2017 | New Boilers | |
| 27/11/2017 | Permit Boundary | Revised and waste drying processes added . Fig 2 revised |
| | | Risk Assessment extends to include the Waste Wood Pre-treatment |
| | | Tables of Risk Assessment now include waste wood treatment and use. |
| | | |
| 21/05/2024 | Reviewed | Reviewed and Revised previous parts of assessment (highlighted revisions); Fig 2. Site plan |
| 21/05/2024 | Permit Boundary | Revised with added manure storage building to NW of main site |
| 21/05/2024 | Clinical Waste 3.8 | 6.6 Tables of Risk Assessment now include clinical waste storage. |
| 21/05/2024 | Hazardous Waste 3.9 | 6.6 Tables of Risk Assessment now include hazardous waste storage, inc. asbestos |
| 21/05/2024 | ABP Waste 3.10 | 6.7 Tables of Risk Assessment now include food waste storage; and manure storage. |
| | | |
| | | |
| | | |

# 1.0 INTRODUCTION TO THE WASTE RECYCLING FACILITY

## 1.1 Introduction to the Brian Armistead Ltd Location

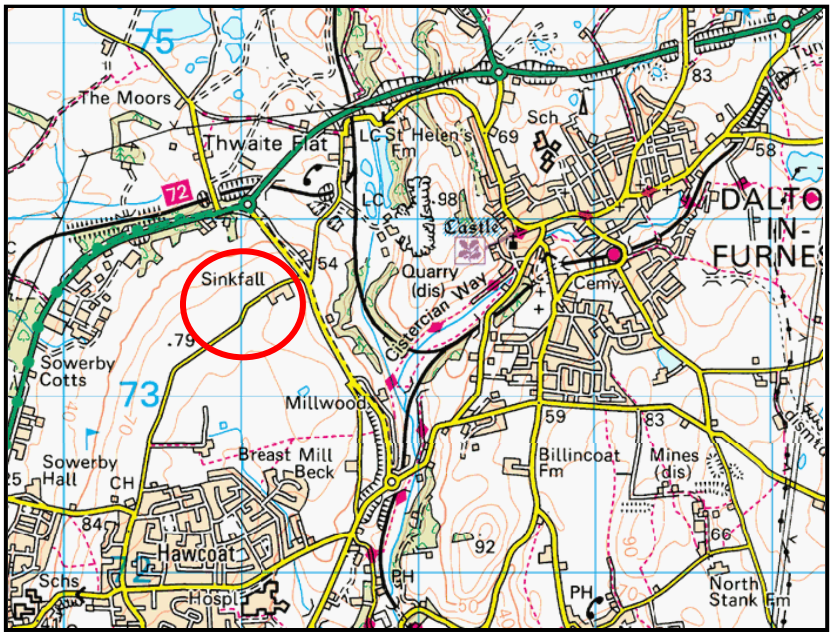
The site is set in rural countryside at a location where there is an existing facility for windrow composting of green waste, collected from Barrow-in-Furness and South Lakes area; and also aggregates and other materials reclamation and recycling activities.

There is the Town of Barrow-in-Furness beginning at 1km to the south, and there is local housing at the Thwaite Flat development to the north and Sowerby Cottages development to the west. There are two nearby properties; one just beyond 150m to the north-east and one just beyond 100m to the south-east from the nearest parts of the proposed facility. Figure 1.

There are no significant watercourses nearby.

There are trees and wooded areas alongside the A590 to the north, but these are not protected woodlands. There are no nearby footpaths.

**Figure 1. Extract from Map (1km grid) Showing location of Recycling Facility.**




## 1.2 Introduction to the Brian Armistead Ltd Context and Current Operation.

Brian Armistead Ltd. trading as Sinkfall Recycling facility undertakes the Composting of Green Waste on behalf of Barrow in Furness and South Lakes District Councils. The facility provides services for the Transfer and Treatment of waste, with the aim of maximising recovery of aggregates and other materials.

The facility comprises enclosed windrow composting facilities and other buildings for the recovery of materials. It has a Permitted maximum tonnage throughput of 75,000 t/yr.

The Permit allows for the composting of the green waste that is undertaken in two separate stages; the preparation and sanitisation in one; and the stabilisation and maturation in a separate building. All these processes are on a concreted surface that provides for effluent and rainwater drainage to a rain-water storage tank. The Composting process includes waste reception, shredding, Composting, maturation, screening and product formation according to the 'British Standard' (PAS100) quality assurance scheme.

In addition to the Composting, the Permit includes metals, wood and aggregates recycling as well as some other materials transfer and recycling. The Permit has been varied to include further waste treatment activities including freshwater drilling mud reclamation (de-watering) and street cleansing waste (de-gritting), for aggregates recovery. It is now being varied to include clinical waste and hazardous waste transfer etc.

## 1.3 Environmental Risk Assessment – Key Aspects

The Environmental Risk Assessment has been undertaken utilising the Environment Agency's system of Hazard and Risk determination based on the source pathway and receptor model.

The EA standard templates have been utilised and where necessary adapted to provide a more detailed examination of the processes for this site.

In the majority of instances the Risk Assessment has shown that there is a LOW risk of causing adverse environmental impact, and where the potential impact has been shown to be medium, then further consideration of technical and operational systems has been undertaken in order to improve the level of environmental protection.

**Section 5** provides a summary of the key processing activities and the associated environmental controls to be implemented in order to maintain a high standard of Environmental Performance at the site.

Within **Sections 6** of this Environmental Risk Assessment, the Hazards and Risk Assessment is presented in a general format as given by the Environmental Agency and utilises the Source, Pathway Receptor model to evaluate environmental risk.

## 1.4 Conclusions - Environmental Risk Assessment

Given that in general the site is reasonably remote from third parties and many aspects of the processes already exist and have operated successfully for several years without complaint or incident (except for a drainage overspill incident), then it has been determined that the activities at the site are **unlikely** to cause any adverse environmental impact.

## 1.5 Quality Assurance for Environmental Management

Brian Armistead Ltd. have engaged Recogen Ltd of Shrewsbury to provide consultancy expertise and assistance with the implementation of Environmental Management Systems for this development and Recogen are involved in the updating of the ERA.

**Recogen Ltd. Environmental Quality Reporting**

Recogen Ltd. is a recognised organisation with appropriately trained, qualified and experienced personnel; independent to the composting/waste treatment site operator. The Environmental Risk Assessment has been undertaken and compiled by D J Baldwin, BSc (Hons) CEnv. MCIWM, Technical Director with Recogen Ltd. who has over 35 years waste and environmental management experience. David is FACTS (fertiliser advice certification) qualified and holds the Environmental Permit Operators Certificate (EPOC) and is registered with WAMITAB.

Recogen Ltd. is registered as a Quality Environmental Consultancy on the National Business Link Register and is a supplier of Technical Consultancy to DEFRA, The Waste and Resources Action Programme (WRAP) and to The Renewable Energy Association (Organic Recycling Group - ORG) formerly known as The Composting Association.

David has managed or contributed to many major projects on waste management for Government (DEFRA, ETSU, DTI, WRAP, EA) and The Waste Management Industry including Composting and Anaerobic Digestion processes, compost site design, product quality assurance (PAS100:2005 and 2011), The Compost Quality Protocol, ISO9001, ISO14001, COSHH and H&S Risk Assessments.

Recogen have a policy for maintaining Professional Technical Competence and have certificates from Odour laboratory training, emissions sampling and other environmental qualifications including the ability to carry out bioaerosols sampling, dust and liquids sampling and noise measurements

Recogen have equipment and resource to undertake tests and sampling of air from odour/dust/ bioaerosol management systems and have successfully specified, designed and built or overseen the building of biofilters, water based trickling filters and environmental protection systems.

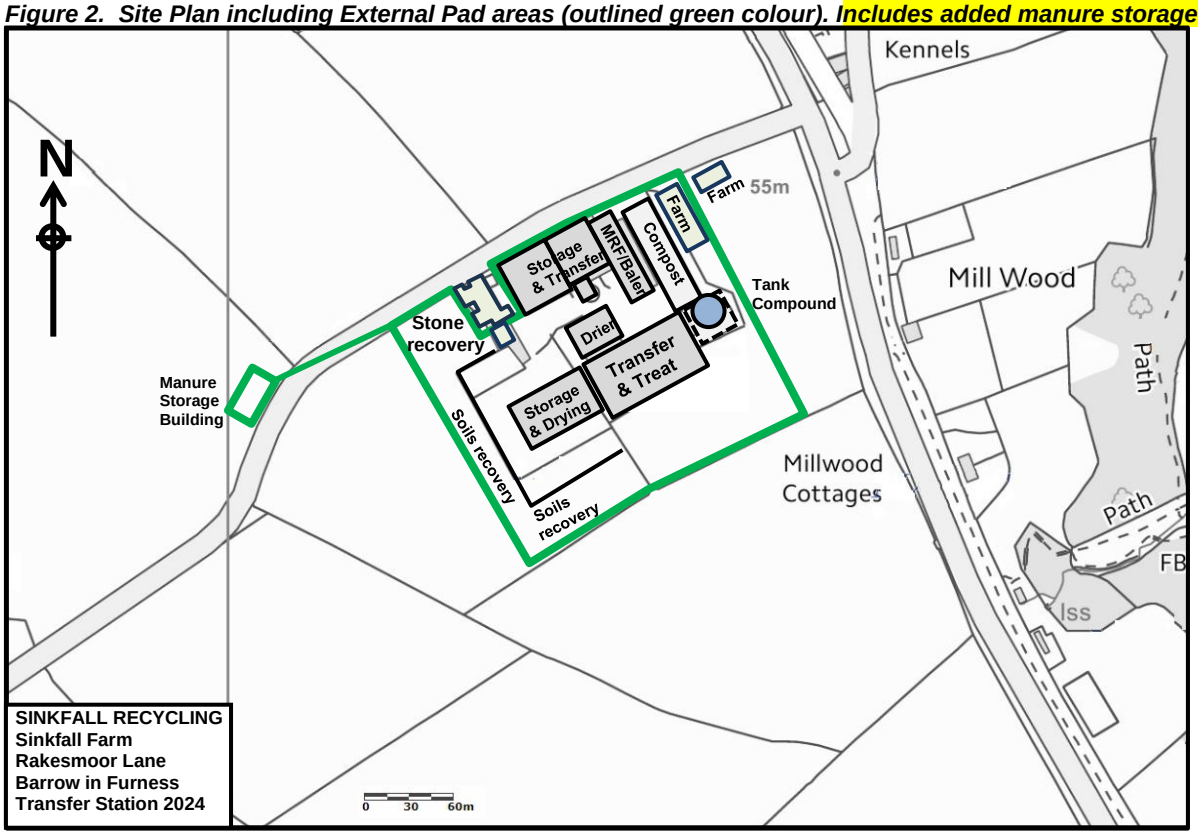
# 2.0 Site Plan

## 2.1 Plan of Site and Location of key Activities

Sinkfall Farm
Rakesmoor Lane
Barrow-in-Furness
Cumbria LA14 4QE

**Land at OS Grid Ref: Grid ref:** SD2118,7358 **X:** 321200m **Y:** 473600m

***Figure 2. Site Plan including External Pad areas (outlined green colour). Includes added manure storage***




## 2.2 Risk Assessment due to Revised Site Plan

a. The boundary on the eastern edge has been revised to simplify and clarify the line, and to take in the new liquid containment compound. The extension does not increase environmental risks, but will provide improvement because the new containment shall replace the steel tank that has reached end of life.

b. The boundary has been revised to include the new 'manure storage building' to the north-west.
This building is fully enclosed and shall be divided into bunkers for the segregated storage of bulk materials for use on the farmed land nearby.
This storage building has been assessed for environmental risks; and all risks are 'LOW'. The building will provide storage for material that is currently stored in the open; and therefore this represents environmental improvement.

| Hazard | Risk | Control | Assessed | Risk |
|---|---|---|---|---|
| Manure solids | Odours/flies/pests | Bunker storage aids good management | Enclosed building, contained. >350m distance from neighbours | LOW |
| Effluent drainage | Pollution to ground or surface water | Sealed effluent containment and storage tank. | Storage constructed to CIRIA Guidance C736 | LOW |
| Manure movement | Dust, bioaerosols | Bunker storage aids good management | Enclosed building, contained. >350m distance from neighbours | LOW |
| | | | | |

# 3.0 Site Activities

## 3.1 Summary of Site Activities

The Main Site activities include:

a. Waste Transfer
b. Waste Treatment for Recovery of materials and recycling
c. Mixing of pre-treated or reclaimed materials
d. Waste Storage (pending Disposal and pending recovery)
e. Green Waste Composting; including shredding, screening and composting.
f. Aggregates Recovery and Recycling
g. Fresh Water Drilling Mud Recovery
h. Street Cleansing materials (Aggregates) Recovery
i. Grade A Waste Wood Pre-treatment as Fuel (2017)
j. Biomass Boilers (2017 under separate Part B Permit)
k. Waste Materials Drying (for animal Bedding)
l. Clinical waste storage and Transfer
m. Hazardous waste storage and Transfer
n. ABP (food) waste storage and Transfer
o. ABP (manure) waste storage and Transfer

The activities a) to k) are provided for within the current Permit. Activities l, m, n, o are being added.
The activities may be described in simple terms as follows in Section 3.2 to 3.6

## 3.2 Waste Transfer

Known registered hauliers and carriers including Council vehicles deliver materials to the site via the weighbridge in a variety of vehicle formats, including skips and Refuse Collection Vehicles. The materials may be offloaded into dedicated reception bays or areas.

The material may be re-loaded for direct onward transport to known secondary disposal or recovery facilities, or may be dealt with by a variety of waste treatments.

The Transfers all take place on sealed concreted base, with sealed drainage. For some materials the reception is under the cover of buildings, or within specialised enclosures.

Some materials (e.g. clinical waste and hazardous waste) are to be catered for in 'Euro bins' or sealed self-bunded tanks, and may, if required, be stored within a secondary lockable container.

## 3.3 Waste Treatments (Other than composting)

Materials may be derived from the construction industry and comprise non-organic material including aggregates, metals, wood and plastics. The materials may be subjected to manual or mechanical sorting and segregation, mechanical crushing, pulverising, shredding or other such physical or chemical treatment. Materials are recovered and stored for bulking up prior to being loaded to transport for onward delivery to secondary recovery or recycling facilities. Non-recoverable waste materials from the input material are similarly bulked up and taken to an appropriate disposal facility such as a landfill.

The aggregates are screened and graded in accordance with a quality management system with reference to the WRAP Aggregates Protocol.

Grade A Waste Wood is received and treatments include segregation, sorting, chipping or shredding, and size grading.

Paper and wood materials are received for conversion to animal bedding using preparatory treatments and drying.

## 3.4 Waste Treatment by Composting

The organic materials known as 'Green Waste' comprising garden plant material, grass cuttings, hedge clippings, shrubs and tree branch material are delivered to a prescribed reception area, checked for acceptability, stored, shred and then moved to an enclosed area for undergoing aerobic composting. After being treated to the sanitisation stage of composting, the material is relocated to a secondary area, under cover and enclosed where it continues through the process to become stabilised compost. It is screened and stored ready for despatch. The process follows a quality management system known as 'PAS100'.

Composting is undertaken in such areas and using techniques so that the release of emissions is minimised.

## 3.5 Freshwater Mud Waste Treatment

The additional activity of recovery of materials from freshwater Drilling Mud will take place in a dedicated area using a reinforced concrete storage tank. The mud is generated from the drilling into the earth where water is used as a coolant and when mixed with silt it becomes a lubricant to the drill bit. The resultant mud is sucked away from the drill and is stored in sealed containers. This material can be treated so that the silt, sand and clay soil material is de-watered and conditioned by drying in order to be used e.g. as a soil in land reclamation schemes. The liquids extracted by de-watering may be sent by tanker to a local waste-water treatment facility. The treatment process is physical and chemical and relies on settlement and compaction. Recovered materials shall be loaded direct to sealed vessels/containers.

## 3.6 Street Cleansing Waste Treatment

The additional activity of recovery of materials from Street cleansing shall take place in a dedicated area and away from other treatments such as composting. The treatment process is physical and chemical and relies on settlement and compaction. Recovered materials shall be loaded direct to sealed vessels/containers.

The residues from road sweepings contain a mixture that comprises approximately 45% grit, 40% soil, 14% organics (leaves and twigs), and 1% contrary material as 'litter' (drinks cans etc.)
Proprietary machinery shall recover the grit as aggregates and produce the mix of soil and organics as a suitable substrate for soil manufacture that is fit for use in land reclamation schemes. The grit including sand and any stone content shall be directed to the aggregates recycling part of the existing facility. Tests have shown that these will satisfy the requirements of the 'Aggregates Protocol' as end-of-waste and will be compliant with the Standards as given in the Specification for Highways works as required.

The primary outputs shall be i). Recovered aggregates. ii) Recovered soil; iii) recovered water for recycling via a waste-water treatment works. Litter and contrary material shall be sent for disposal.

## 3.7 Environmental Risk Assessment (Drier)

## The Biomass boilers are regulated under a Part B Permit issued by the Local Authority.

## Environmental Risk Assessment

## (Preparatory Treatment – Shredding and Storage of Waste Wood)

This Permit Variation is required in order that waste wood Grade A can be size reduced prior to feeding to the boiler intake mechanism.

This will produce a woody biomass that may be known as Hog Wood and comprise wood shavings, wood chip and shredded particles of wood that may be described as being with a wide ranging particle size classification and which are either derived directly from 'virgin' wood, but have entered the chain of waste management and are therefore 'waste wood' or else are from sawmills, or industry (e.g. paper mill) that has discarded the wood. The Grade A category also includes 'packaging' wood which includes wooden pallets and wooden cable reels.

The shredding/chipping that is required, is very similar to that used within the Green Waste Composting process. A large mechanical shredding machine with some design of particle size regulator (shredder screen) produces the shredded wood, and this may or may not need to be screened to remove incorrectly sized particles that are not within the specification, i.e. too fine (dust) or too coarse and would risk fouling the boiler intake mechanism.
Wood based Grade A fine material may be utilised within the composting process, or used as animal bedding.

The coarse material would be re-shred until it passes the correct size grade.
Environmentally, the risks are noise, dust and fire hazard.

The noise from these machines will be no worse than that used in composting and may be partially enclosed and noise attenuated and be much quieter.

Dust shall be removed quickly, but as most of the material sources are damp, then dry dust that is potentially high risk, for fire etc. or to health will be minimised. If required then dust suppression shall be used, including wetting down dry dusty surfaces, sprinkler systems and spray misting systems.
Fire risk in stored material shall be minimised by attention to the storage of the material, the volume of shredded wood in storage, the storage conditions and risk minimisation due to Good Practice procedures and minimisation of ignition sources; including open flames, sparks, smoking, friction heat sources, hot-works (welding, grinding, cutting etc.) in the storage area.
The following are relevant sections form the Fire Prevention Plan.

| | | |
|---|---|---|
| **Waste Materials on site** | Ensure that these are protected from ignition sources.<br>Ensure that combustible materials such as waste plastics (litter) are contained and removed from sensitive areas, e.g. compacted and stored externally in steel containers. | 1. Report Incident to Manager<br>2. Call Fire Brigade<br>3. Move mobile plant to remote area; away from the waste materials.<br>4. Ensure other people are kept away from danger area.<br>5. Implement Liquid Accident plan |
| | | |
| **Woody Materials on site** | Ensure that these are protected from ignition sources.<br>Ensure that combustible materials such dry woody materials, wood chip or sawdust are removed from sensitive areas, i.e. stored externally in controlled areas. | 1. Report Incident to Manager<br>2. Call Fire Brigade<br>3. Move mobile plant to remote area; away from any woody or other combustible materials.<br>4. Ensure other people are kept away from danger area.<br>5. Implement Liquid Accident plan |
| | | |
| **Biomass Boiler, Stack and Hot Air drying System** | Boiler Systems to be regularly checked and serviced.<br>Checks specifically for hot-gas leaks<br>Checks undertaken to ensure that all safety systems are intact and effective Checks to ensure that all water sprinkler systems are effective. | 1. Report Incident to Manager<br>2. Sound Alarm and get help<br>3. Call Fire Brigade<br>4. Ensure other people are kept away from danger area.<br>5. Activate Fire Sprinkler system if it has not been activated automatically.<br>6. Activate Site Fire Suppression system<br>7. Implement Liquid Accident plan (drainage) |
| | | |
| **FIRE ACCIDENT / SAFETY PLAN** | System fitted with fail-safes<br>Fire-water supply points<br>Fire Extinguishers<br>Training<br>Fire practice 'drills' | 1. Report Incident<br>2. Call Fire Brigade telephone 999<br>3. Get everyone out<br>4. Use fire-fighting equipment for small fires or if necessary to get people out.<br>5. Assess Risk of fire spread<br>6. Shut off area<br>7. Get out; Move to fresh air area<br>8. Arrange for Fire brigade arrival<br>9. Implement FIRE WATER PLAN |
| | | |
| **FIRE –WATER PLAN** | All areas are on impermeable surfaces with kerbs or bunds.<br>No drains are directed to discharge outside of system, except clean roof water drains. | 1. Review situation<br>2. Prepare portable bunds, drain covers<br>3. Close/cover Clean-water Drains<br>4. Contain Liquid<br>5. Allow fire-water to drain to effluent sump<br>6. Prepare tanker.<br>7. Prepare absorbents<br>8. Re-use fire-water if appropriate |

## 3.8 Clinical Waste - Environmental Risk Assessment

The Hazardous Waste and Clinical Waste share a number of common requirements, methods and environmental controls:

1. Primarily intended as reception, checking, bulking up, secure storage and containment.
2. No Treatment, other than sorting and segregating where required.
3. Higher levels of Operator Risks, and therefore training and management requirements
4. Clinical Waste may entail Hazardous Wastes inclusion.
5. Hazardous Waste entails consignment note management.

**Clinical Waste - Environmental Management Method**

- Hazardous Waste and Clinical Waste shall not be mixed.
- Each shall be handled separately and in accordance with the nature of the Hazard.
- Clinical Waste shall typically be received in purpose designed and coloured (yellow) sacks; pre-loaded to lockable lidded Euro-bins (4 wheeled containers).
  These shall be stored in a shipping container for security, preclusion of pests and containment.
- Where clinical Waste is required to be bulked up, it shall be ensured that the waste type is consistent, and that mixing does not occur within the same Euro-bin container.
- Where Euro-bins are re-used, they shall be disinfected and air dried.
- Storage limits and processing limits shall be observed.
- Operatives shall be trained specifically in regard to these waste types.
- The shipping containers shall have high level securely guarded air ventilation
- Contingency Equipment shall include emergency spill kits, fire extinguishers, extra PPE
- Anti-locking devices for the container doors; for when personnel operate within a container.

**Clinical Waste – Risk Assessment**

Given the level of Management, the small quantity involved at any one time and the specialist containment, the Risks of Emissions are LOW.
A detailed consideration is undertaken at section 6.6.

## 3.9 Hazardous Waste - Environmental Risk Assessment

**Hazardous Waste – Types and Storage Options**

| | Waste Type | Storage |
|---|---|---|
| a | Paints (gloss paint and thinners) | Within own tin/can/bottle; within a lidded dolav/ container |
| b | Waste Oil (engine oil and filters) | Within own tin/can/bottle; within a lidded dolav/ container; else common ‘engine’ lubricating oil, within self-bunded liquid tank. Filters within leak proof containers: lidded dolav etc. |
| c | Fluorescent Tube Lights | Steel horizontal cabinet with sections for tube-lights and other lamp bulb types (compacts, gas filled etc) |
| d | Batteries -Lead-acid and other types. | Lead acid batteries stored upright within sealed dolav, with insulation mat used when required.<br>Alkaline, Nickel Cadmium Zinc and other batteries stored separate in plastic/insulating containers, within fire-proof, and leak-proof storage. |
| e | Cleaning and Polishing agents. bleach, drain cleaners etc. | Within own tin/can/bottle; within a lidded dolav/ container; |
| f | Fuels and Gases. | Fuel within own tin/can/bottle; within a lidded dolav/ container; i.e. fire-proof, and leak-proof storage.<br>Gas cylinders stored in cage compound, in ventilated area, with due regard to fire and spillage / emission risk |
| g | Asbestos | Shall be pre-wrapped, bagged and contained; and stored in dedicated sealed lockable container |

**Hazardous Waste - Environmental Management Method**

- Hazardous Waste and Other Waste shall not be mixed.
- Each type of Hazardous waste shall be handled separately in accordance with its Hazard.
- Hazardous waste shall be segregated and stored in dedicated containers for security, preclusion of pests and containment of leakage or emissions.
- Where Hazardous Waste is required to be bulked up, it shall be ensured that the waste type is consistent, and that mixing does not occur within the same container.
- Where Euro-bins are re-used, they shall be cleaned and air dried.
- Storage limits and processing limits shall be observed.
- Operatives shall be trained specifically in regard to Hazardous waste types.
- The shipping containers where used, shall have high level securely guarded air ventilation
- Contingency Equipment shall include emergency spill kits, fire extinguishers, extra PPE
- Anti-locking devices for the container doors; for when personnel operate within a container.

**Environmental Risk Assessment**

Given the higher level of Management; the controls in place, the small quantity involved at any one time and the specialist containment, the Risks of Emissions are LOW.
A detailed consideration is undertaken at section 6.6.

## 3.10 Animal By-Products Waste - Environmental Risk Assessment

**Animal By-Product (ABP) Waste – Types and Storage Options**

Animal By-Products are demoted by 'Category I, Category 2, Category 3'.

Category 3 waste is sub-categorised to include 'Catering Waste', i.e. that being food waste that may contain animal derived products that has been prepared and served (catered) to consumers. This includes domestic food waste that has similarly been catered as food to humans.

Category 3 Waste includes Catering Waste, but also includes animal derived products that would ordinarily have been edible, but have become waste within the preparation, manufacturing or supply chain; e.g. food manufacturer, butchers, sandwich manufacturer or food outlet kitchen such as a cafeteria or restaurant. This includes out-of-date food and food that is spoiled or rejected.

Category 2 Waste includes animal by-products that are from a healthy animal, but are in-edible; including the gut contents, bones and the shells from shell-fish.

Category 1 waste is of no interest and is not intended to be permitted; it includes fallen stock.

In general, ABP materials are required to be treated and the chain of custody to be strictly documented. Some lower risk ABP materials have a derogated status and can be spread to land without treatment (e.g. waste milk, manure and gut content).

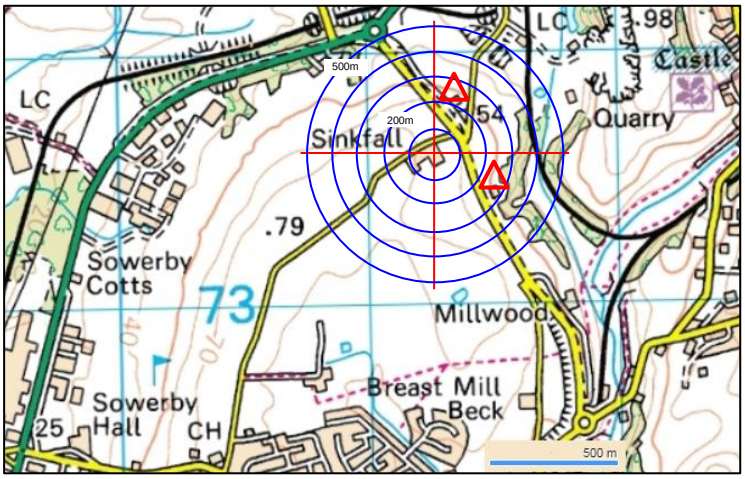
| | **Waste Type** | **Storage** |
|---|---|---|
| a | Catering Waste from Municipal sources, household collections or similar. Likely delivered within containers, or wheeled bins. | Within leak proof containers: lidded dolavs or Wheeled Euro-bins. May be decanted into larger sealed, lidded RO-RO container for transport. May be stored in refrigerated environment when required. Shall be destined for AD or IVC. |
| b | Category 3 Former Foods, and other 'solid' Category 3 ABP's | Within leak proof containers: lidded dolavs or Wheeled Euro-bins. May be decanted into larger sealed, lidded RO-RO container for transport. May be stored in refrigerated environment when required. Shall be destined for AD or IVC. |
| c | Derogated Category 2 ABP (manure and gut content) | Within separate, enclosed and secure manure storage building, within bunkers to provide management control |

**ABP Waste - Environmental Management Method**

- ABP Waste of different categories shall not be mixed in storage
- Each type of ABP waste shall be handled separately in accordance with its Category.
- ABP waste shall be segregated and stored in dedicated containers for security, preclusion of pests and containment of leakage or emissions; or else in the manure store.
- Where Catering Waste, or Category 3 Waste is required to be bulked up, it shall be ensured that the waste category is consistent with regard to the treatment proposed.
- Where Euro-bins are re-used, they shall be cleaned and air dried.
- Storage limits and processing limits shall be observed.
- Operatives shall be trained specifically in regard to Animal By-Product waste types.
- The full sized lidded containers, shall be regularly checked for leaks, seals and safety
- Contingency Equipment shall include emergency spill kits, disinfectants and correct PPE
- The reception, storage and despatch shall have regard to the ABP recording required.

# 4.0 Environmental Setting and Sensitivities

**Figure 3. Location of nearby Dwellings**




## 4.1 Local Environmental Sensitivities

The local land area, its location and proximity to nearby environmentally sensitive areas has been researched and considered. Reference has been made to the Multi-Agency Mapping 'MAGIC' on the internet at http://www.magic.gov.uk/MagicMap.aspx.... And Environment Agency 'What's in my Backyard'.

The local environment has been checked for the following and marked where there is an issue:

| | | Yes | No | Comment |
|---|---|---|---|---|
| i | AONB | | x | |
| ii | National Nature reserve | | x | Sandscale Haws NNR >1 km to the NW |
| iii | National Park | | x | |
| iv | NP Lake District | | x | |
| v | Ramsar Site England | | x | Duddon Estuary >1 km to the WNW |
| vi | SSSI | | x | North Walney National Nature reserve NW |
| vii | SSSI 33 | | x | Area west of Sowerby wood |
| viii | Special Area Conservation | | x | |
| ix | Special Protection Area | | x | Duddon Estuary >1 km to west |
| x | NVZ | | x | |
| xi | Groundwater Abstraction | | x | Nearest is 820 m WSW of area, west of Barrow Mill. 2nd is south of Barrow Mill |
| xii | Groundwater Source Protection Zone 3 | | x | Begins south of a line from Rakesmoor Farm across fields 110 m south of Roundbank field (see fig 6) |
| xiii | Wells and springs | | x | None identified locally, from OS maps. |

**Figure 4. Location of nearest SSSI**

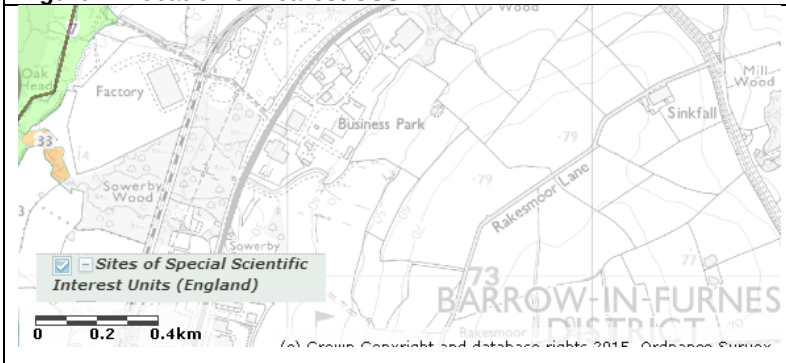



**Figure 5. Location of nearest NVZ**

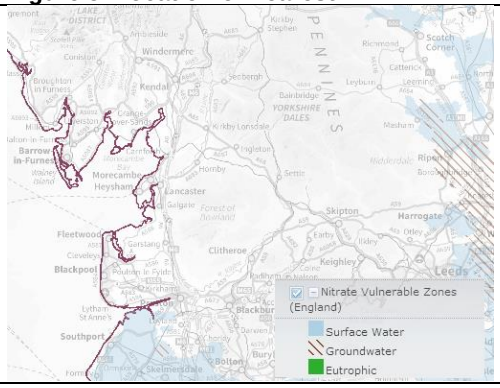


**Figure 6. Location of nearest SPZ**

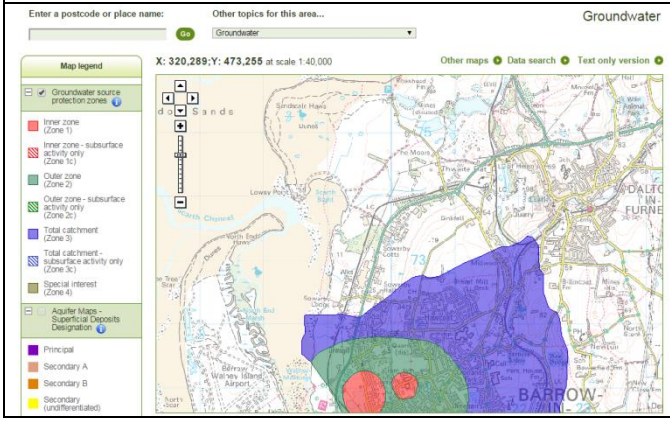
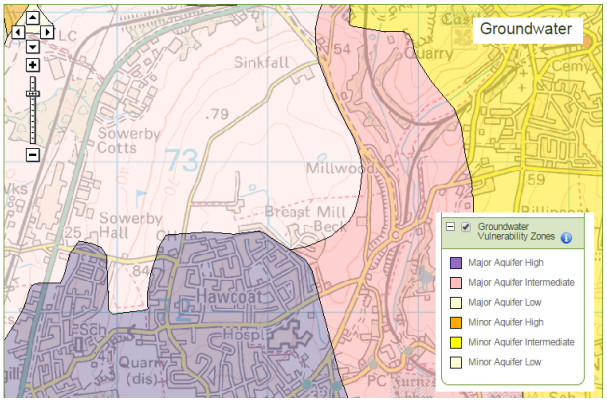



**Figure 7. Location of Groundwater Vulnerability Zone**




### 4.2 Hydrogeology

Being of slow permeability at the site the risk to groundwater is low. The Groundwater Vulnerability is Low. Checks of local ordnance survey maps reveal no evidence of springs, or wells. The nearest water abstraction point is shown in figure 6 (Source Protection Zone) and the inner zone is approximately 2.25km distant from the Sinkfall Recycling Site.

### 4.3 Surface waters

There are no surface waters immediately adjacent to the site. The site is at a high point and the surrounding fields have drainage and some perimeter ditches. There is a road ditch to the south east. There are no direct connections of drains or ditches from the site to any drainage systems and the risk to surface waters is very low.

### 4.4 Flood Risk

The site is at a high point and there is no risk of surface flooding.

# 5.0 Environmental Protection (Pollution Prevention) Measures

## 5.1 Pollution prevention measures

The pollution prevention measures in place at the site include:

- Strict control of input materials
- Impermeable surfaces to all operational areas
- Sealed drainage to drain sumps and surface water storage within steel tank (to be replaced by CIRIA Standard C736 Concrete compound.)
- Impermeable surface with sealed containment to composting areas
- Covered areas (buildings) for composting processes
- Covered areas (buildings) for waste reclamation processes
- Use of containers, skips and vessels for materials containment.
- Certification to PAS100 Compost Quality Protocol
- Reference to Aggregates Quality Protocol
- Restriction on the intake of dusts or fibres.
- Management and Training of Personnel.
- Clinical Waste stored within secured, enclosed containers
- Hazardous Waste stored within secured, enclosed containers
- Animal manure/waste to be stored in secure enclosed building with effluent containment and storage

## 5.2 Management to Minimise Potential Environmental Impacts

**Odour Risks**; Attention has been given to the types and nature of the wastes that are to be accepted at site and also for those types that are not intended or those that will require additional management and

immediate processing, if they are received. The focus of attention is to be placed on control (prevention of emissions release) and containment rather than on dispersion.

**Bioaerosols Risks**; The system provides for enclosure, and minimised release of bioaerosols, with processes and systems devised to reduce undue movement of the material, to provide maintenance of damp conditions and a scheme for air handling.

**Dust** is to be controlled by materials acceptance criteria, enclosed or containerised materials storage and the use of damping down, and sprinkled clean water to the surfaces when required.

**Surface waters**. There are no streams or ditches in close proximity to the site, the design provides for containment of surface water; and provides a system of kerbing to contain spillages.

**Groundwater**; There are no significant ground-water schemes, aquifers or boreholes in the area..

**Noise** is to be controlled by location and use of the principal sources of noise (e.g. green waste shredder) within confines of the buildings. Day-time noise shall be managed by ensuring that all vehicles and mobile machines are appropriately specified and rated for noise emissions and that all acoustic panels, mufflers and silencers shall be maintained appropriately.

# 6.0 ADAPTED GENERIC RISK ASSESSMENTS

## 6.1 Adapted Generic risk assessments

The Risk Assessments utilise the Environment Agency's Generic Risk Assessments that have been developed for various Standard Rules permits; and then adapts them so that they are bespoke to the this site and these processes.

Table 2 illustrates the methodology used and the sequence of considerations, moving through from the Hazard, the Assessment of the Risks based on Probability and Consequence and then by consideration to the Risk Management or controls, then concludes the Residual Risk.

The Risks have been assessed (Section 7) using the 'Probability v Consequences' matrix as shown (Figure 8.):

**Figure 8. Risk Assessment Matrix**

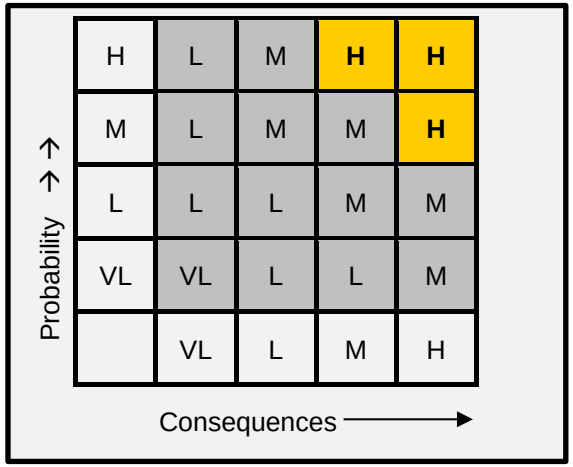



**Table 2 Environmental Risk Assessment**

| Data and information | | | Judgement | | | Action (by permitting) | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| **What is at risk? What do I wish to protect?** | **What is the agent or process with potential to cause harm?** | **What are the harmful consequences if things go wrong?** | **How might the receptor come into contact with the source?** | **How likely is this contact?** | **How severe will the consequences be if this occurs?** | **What is the overall magnitude of the risk?** | **On what did I base my judgement?** | **How can I best manage the risk to reduce the magnitude?** | **What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).** |

## 6.2 Table 2 ERA for the Composting Activities at Sinkfall Recycling

| Receptor | | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management Systems . | Residual Risk |
|---|---|---|---|---|---|---|---|---|---|---|
| What is at risk? What do I wish to protect? | | What is the agent or process with potential to cause harm? | What are the harmful consequences if things go wrong? | How might the receptor come into contact with the source? | How likely is this contact? | How severe will the consequences be if this occurs? | **What is the overall magnitude of the risk?** | On what did I base my judgement? | How can I best manage the risk to reduce the magnitude? | What is the magnitude of the risk after management |
| Local human population | **SHED 1 And SHED 2** | Release of micro-organisms (bioaerosols ) | Harm to human health - respiratory irritation and illness | Air transport then inhalation | **Low** | Medium | **Medium** | Composting produces and is likely to release micro-organisms. There is potential for exposure if anyone living or working close to the site (excluding operator and employees). However, the size of the site is kept small and the process is within buildings, is well managed and the material damped down to minimize emissions | Damping down available. Batch composting system shall be less than 500 tonnes in each shed. There is protection from wind directions at the site. The stabilisation uses suction ventilation to provide aeration.<br><br>Being of a low tonnage, the need for the shredding activity, turning or screening is reduced and is more easily managed. | **LOW** |
| Local human population | **PAD Or SHED 2** | Releases of particulate matter (dusts). | Harm to human health - respiratory irritation and illness | Air transport then inhalation. | **Low** | Medium | **Medium** | Permitted waste types do not include …. dusts, powders or loose fibres but composting produces and is likely to release particulates. There is potential for exposure if anyone living or working close to the site (excluding operator and employees). | Damping down available. Batch composting system shall be less than 500 tonnes in each shed.<br><br>Turning is reduced due to use of fan suction aeration. Screening is undertaken within a building and is well managed. | **LOW** |
| Local human population | **PAD Or SHED 2** | Releases of particulate matter (dusts). | Nuisance - dust on cars, clothing etc. | Air transport then deposition. | **Low** | Medium | **Medium** | As above | Damping down available. Batch composting system shall be less than 500 tonnes. The main activities, notably screening are undertaken within the shed 2. | **LOW** |
| Local human population<br><br>Local and distant human population | **SHED 1 And SHED 2** | Releases of particulate matter (dusts) and micro-organisms (bioaerosols). | Gastro-intestinal illness | Air transport then deposition on garden fruit/vegetables and then ingestion. | **Low** | Medium | **Medium** | As above…process within buildings and…<br>Most dust will be washed off by rain or during food preparation. Illness likely to be mild and short term | Damping down available. Batch composting system shall be less than 500 tonnes. Management provides sanitisation of the compost. Material is processed within buildings. | **LOW** |
| Watercourses | **PAD SHED 1 And SHED 2** | Releases of effluent or contaminated yard rainwater | Composting Process Effluent. | Surface run-off, over concrete to drains or ditches | **Low** | LoW | **Low** | Composting Process is undertaken within buildings. Effluent is recycled. Yard water is contained. No sensitive waters nearby and no drains or ditches direct to surface waters. | Site is all on hard concreted base, with sealed drainage to sumps and to storage tank. Yard areas are contained. Minimal area open to rainwater, as composting process is within building. | **LOW** |

## 6.3 Table 3 ERA for the Waste Transfer and non-organic Treatment Activities at Sinkfall Recycling

| Receptor | | Source | Harm | Pathway | Probability of exposure | Consequence | Magnitude of risk | Justification for magnitude | Risk management Systems . | Residual Risk |
|---|---|---|---|---|---|---|---|---|---|---|
| What is at risk? What do I wish to protect? | | What is the agent or process with potential to cause harm? | What are the harmful consequences if things go wrong? | How might the receptor come into contact with the source? | How likely is this contact? | How severe will the consequences be if this occurs? | **What is the overall magnitude of the risk?** | On what did I base my judgement? | How can I best manage the risk to reduce the magnitude? | What is the magnitude of the risk after management |
| Local human population | **SHED Yard or in Skip** | Release of micro-organisms (bioaerosols ) | Harm to human health - respiratory irritation and illness | Air transport then inhalation | **Low** | **Low** | **Low** | Organic materials go to the composting process. Non Organics have limited likelihood of generating bioaerosols. Most materials are inerts, such as plastic, glass, aggregates, metals<br><br>However, the size of the site is kept small and the process is within buildings, is well managed to minimize emissions when being handled. | Damping down available.<br><br>Treatments generally entails manual or simple mechanical sorting and segregation. Minimal organics that may generate bioaerosols. . | **LOW** |
| Local human population | **SHED Yard or in Skip** | Releases of particulate matter (dusts). | Harm to human health - respiratory irritation and illness | Air transport then inhalation. | **Medium** | Low | **Medium** | Permitted waste types do not include …. dusts, powders or loose fibres but some aggregates may entail dust sized particles. There is potential for generation of dust and some activities external may release dust therefore some risks of release; however, there are no neighbours in close proximity. | Damping down available.<br><br>Materials movement can be reduced during windy weather. Screening processing can be undertaken within a building and is well managed. | **LOW** |
| Local human population | **SHED Yard or in Skip** | Releases of particulate matter (dusts). | Nuisance - dust on cars, clothing etc. | Air transport then inhalation. | **Medium** | Low | **Medium** | Permitted waste types do not include …. dusts, powders or loose fibres but some aggregates may entail dust sized particles. There is potential for generation of dust and some activities external may release dust therefore some risks of release; however, there are no neighbours in close proximity. | Damping down available.<br><br>Materials movement can be reduced during windy weather. Screening processing can be undertaken within a building and is well managed. | **LOW** |
| Watercourses | **SHED Yard or in Skip** | Releases of effluent or contaminated yard rainwater | Waste Transfer Process Effluent. | Surface run-off, over concrete to drains or ditches | **Low** | LoW | **Low** | Waste Transfer Process is undertaken within buildings or on sealed surface. Materials are held in skips containers or within buildings. Yard water is contained. No sensitive waters nearby and no drains or ditches direct to surface waters. | Site is all on hard concreted base, with sealed drainage to sumps and to storage tank. Yard areas are contained. Minimal area open to rainwater, as majority of process is within buildings. | **LOW** |

## 6.4 Table 4 ERA For The Waste De-Gritting and De-Watering Activities at Sinkfall Recycling

**ENVIRONMENTAL RISK ASSESSMENT FOR THE DE-GRITTING AND DE-WATERING ACTIVITIES**

| Risk to | Generated by | pathway | Extent | Likelihood | RISK | Rationale and use of Mitigation Measures | Residual Risk |
|---|---|---|---|---|---|---|---|
| Air | dust | Escape via doorway | LOW | LOW | LOW | Very low quantity in process; damp materials, unlikely to raise dust | LOW |
| Air | gases | Escape via doorway | LOW | LOW | LOW | All neutral with no mixing of high and low pH materials and no chemical reactions expected | LOW |
| Water | Drainage or spillages of sludge or waste-water | Over ground surface | LOW | LOW | LOW | Sludge Materials shall only be stored within the below ground tank identified.<br>Waste-water shall be temporarily stored in a road going tanker prior to despatch.<br>Any spillages shall be directed straight back to the below ground tank. | LOW |
| Water | Drainage or spillages from solid materials | Over ground surface | LOW | LOW | LOW | Solid Materials shall be dry stackable and the aggregates and topsoil shall have low moisture content<br>There will be only low quantities of material stored on site once processed. | LOW |
| Land | Solids or effluent | Traffic | LOW | LOW | LOW | The material and the process shall be held within storage facilities, containers or the below ground tank, until processed and then loaded directly to a sealed vehicle for removal. | LOW |
| Humans/ sensitive receptors | Dust/solids/ liquids gases | Aerial, liquid flow or gaseous emission | LOW | LOW | LOW | There are no sensitive receptors within 250m, other than workers/ directors of the operation. The process has LOW risk of generating dust or emissions | LOW |
| Flora | Dust/solids/ liquids gases | Aerial, liquid flow or gaseous emission | LOW | LOW | LOW | There are no sensitive receptors within 250m, other than workers/ directors of the operation. The process has LOW risk of generating dust or emissions | LOW |
| Fauna | Dust/solids/ liquids gases | Aerial, liquid flow or gaseous emission | LOW | LOW | LOW | There are no animals or wildlife that will have access to anywhere near the processing area; and the materials shall be held secure within the building | LOW |

## 6.5 Table 5 ERA For The Wood Pre-treatment Activities at Sinkfall Recycling

### ENVIRONMENTAL RISK ASSESSMENT FOR THE WOOD PRE-TREATMENT ACTIVITIES

| Data and information | | | | Judgement | | | | Action (by permitting) |
|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** |
| **What is at risk? What do I wish to protect?** | **What is the agent or process with potential to cause harm?** | **What are the harmful consequences if things go wrong?** | **How might the receptor come into contact with the source?** | **How likely is this contact?** | **How severe will the consequences be if this occurs?** | **What is the overall magnitude of the risk?** | **On what did I base my judgement?** | **How can I best manage the risk to reduce the magnitude?** |
| Local human population | Releases of particulate matter (dusts) and micro-organisms (bioaerosols). | Harm to human health - respiratory irritation and illness. | Air transport then inhalation. | Medium | Medium | **Medium** | The size of the facility means there is potential for exposure if anyone is living or working close to the site. However, the Permitted waste types are non hazardous and do not include dusts, powders or loose fibres (with the exception of sawdust) and have a low potential to produce bioaerosols, a **medium magnitude** risk is estimated. | Appropriate measures, including, but not limited to, those specified in the management plan for the operation/wood management, have been taken to prevent or where that is not practicable, to minimise any emissions. |
| Local human population | As above | Nuisance - dust on cars, clothing etc. | Air transport then deposition | High | Low | **Medium** | As above. Local residents often sensitive to dust. | As above |
| Local human population, livestock and wildlife. | Litter | Nuisance, loss of amenity and harm to animal health | Air transport then deposition | Low | Low | **Low** | Local residents often sensitive to litter, however permitted waste types have low litter potential. | As above. Appropriate measures could include clearing litter arising from the activities from affected areas outside the site. |
| Local human population | Waste, litter and mud on local roads | Nuisance, loss of amenity, road traffic accidents. | Vehicles entering and leaving site. | Medium | Medium | **Medium** | Road safety, local residents often sensitive to mud on roads. | As above. Appropriate measures could include clearing waste, litter and mud arising from the activities from affected areas outside the site. |
| All surface waters close to and downstream of site. | Serious Fire | Loss of amenity, deterioration of water quality | Direct run off of fire water across site to surface waters. | Low | High | **Medium** | Waste fires are not common but approximately 300 fires pa linked to waste activities. In event of fire, fire water can be produced for days/ weeks. Contaminated firewater run-off can kill fish and aquatic life. | A Fire Prevention Plan has been developed and is available for this site. Personnel have been instructed/trained. The site has containment See Fire Prevention Plan. |

| Data and information | | | | Judgement | | | | Action (by permitting) |
|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** |
| Local Human Population | Serious Fire via spontaneous combustion of waste | Nuisance, harm to human health, loss of amenity, deterioration of water quality | Air transport then inhalation or deposition. Direct run off of fire water across site to surface water. | Low | High | **Medium** | Waste fires are not common but approximately 300 fires pa linked to waste activities. In event of fire, fire water can be produced for days/ weeks. Contaminated firewater run-off can kill fish and aquatic life. | SR - activities shall not be carried out within 200m of a workplace or residential dwelling. |
| Local human population | Noise and vibration | Nuisance, loss of amenity, loss of sleep. | Noise through the air and vibration through the ground. | Medium | Medium | **Medium** | Local residents often sensitive to noise and vibration | SR - emissions shall be free from noise and vibration. SR (if required) - noise and vibration management plan. |
| Local human population | Scavenging animals and scavenging birds | Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity. | Air transport and over land | Low | Medium | **Low** | Permitted wastes unlikely to attract scavenging animals and birds but may become nesting / breeding sites. | Appropriate measures, including, but not limited to, those specified in the management plan for the operation/wood management, have been taken to prevent or where that is not practicable, to minimise any emissions. |
| Local human population | Pests (e.g. flies) | Harm to human health, nuisance, loss of amenity | Air transport and over land | Low | Medium | **Low** | Permitted waste types unlikely to attract pests. | As above |
| Local human population and local environment | Flooding of site | If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream. | Flood waters | Low | Low | **Low** | Permitted waste types are non-hazardous so any waste washed off site will add to the volume of the local post-flood clean up workload, rather than the hazard. | There is a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances |
| Local human population or livestock after gaining unauthorised access to the waste operation | All on-site hazards: wastes; machinery and vehicles. | Bodily injury | Direct physical contact | Medium | Low | **Low** | Permitted waste types are non-hazardous therefore only a low magnitude risk is estimated | Activities shall be managed and operated in accordance with the management system (will include site security measures to prevent unauthorised access). |
| Local human population and local environment. | Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land. | Respiratory irritation, illness and nuisance to local population. Injury to staff, fire fighters or arsonists/vandals. Pollution of water or land. | Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches. | Medium | Medium | **Medium** | Permitted waste types do include flammable materials so a medium magnitude risk is estimated. Wastes should be stored in accordance with Environment Agency Pollution Prevention Guidance (PPG29) on Safe Storage - Combustible materials. | A written management system is in place that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances (will include fire and spillages). |

| Data and information | | | | Judgement | | | | Action (by permitting) |
|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** |
| Local human population and local environment | Accidental fire releasing polluting materials to air (smoke or fumes), water or land. | Respiratory irritation, illness and nuisance to local population. Injury to staff or fire fighters. Pollution of water or land. | As above. | Medium | Medium | **Medium** | As above. | As above (excluding comments on access to waste). Permitted activities do not include the burning of waste. |
| All surface waters close to and downstream of site. | Spillage of effluent from waste, or rainwater run-off from waste (containing suspended solids.) | Acute effects: oxygen depletion, fish kill and algal blooms | Direct run-off from site across ground surface, via surface water drains, ditches etc. | Low | Low | **Low** | Permitted waste types do not include sludges or liquids so only a medium magnitude risk is estimated. No point source emissions to water are permitted. There is minimal potential for contaminated rainwater run-off from woody/paper wastes | All liquids are provided with secondary containment.... (applies to non- wastes such as fuels). Run-off shall be contained so that if/ where spray irrigation, wetting down or misting results in water effluent, this will be captured in the containment system. . |
| All surface waters downstream of site. | As above | Chronic effects: deterioration of water quality | As above. Indirect run-off via the soil layer | Low | Low | **Low** | Waste types are non-hazardous so harm is likely to be temporary and reversible. | As above |
| Abstraction from watercourse downstream of facility (for agricultural or potable use). | As above | Acute effects, closure of abstraction intakes. | Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction. | Low | Low | **Low** | Watercourse must have medium / high flow for abstraction to be permitted, which will dilute contaminated run-off. | As above. Also the activities must be 10 metres from any watercourse and must not be within 50 metres of any well, spring or borehole used for the supply of water for human consumption. This must include private water supplies; |
| Groundwater | As above | Chronic effects: contamination of groundwater, | Transport through soil/groundwater then extraction at borehole. | Low | Low | **Low** | Permitted wastes unlikely to contaminate groundwater. | As above |
| Local human population | Contaminated waters used for recreational purposes | Harm to human health - skin damage or gastro-intestinal illness. | Direct contact or ingestion | Low | Medium | **Low** | Unlikely to occur, but might restrict recreational use. | Appropriate measures, including, but not limited to, those specified in the management plan for the operation/ wood management, have been taken to prevent or to minimise emissions. |
| Protected sites - European sites and SSSIs | Any | Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc. | Any | Medium | Medium | **Medium** | Waste operations may cause harm to and deterioration of nature conservation sites. | The site is greater than 500 metres from an SSSi or protected site. The potential hazards from the permitted activities pose a low risk to the broad sensitivity of species and habitats groups. |

## 6.6 Clinical and Hazardous Waste

***Clinical (and Hazardous) Waste Risk Assessment Table (adapted from Standard Rules DR2008 No.25 v4).***

The scope of the permit shall be likely defined by the following risk criteria:

| | |
|---|---|
| Parameter 1 | Permitted activities - The storage and treatment of waste (D15, D9, R13, D14) |
| Parameter 2 | Permitted waste types – Hazardous, Clinical & Healthcare Waste |
| Parameter 3 | Quantity of waste accepted at the facility: <75,000 tonnes per annum, including a maximum 10 tonnes per day of hazardous waste. |
| Parameter 4 | The quantity of hazardous waste stored at the facility shall be less than 10 tonnes. |
| Parameter 5 | The treatment of hazardous waste for disposal shall not exceed 50 tonnes per day. |
| Parameter 6 | The treatment of waste shall take place within a building on an impermeable surface with sealed drainage system. |
| Parameter 7 | All waste shall be stored in a building or a sealed container. |
| Parameter 8 | All waste shall be stored on an impermeable surface with sealed drainage system. |
| Parameter 9 | The only point source discharges to controlled waters or groundwater, are surface water from the roofs of buildings and from areas of the facility not used for the storage or treatment of wastes. |
| Parameter 10 | The permitted activities shall not be carried out within 200m of a European Site (candidate or Special Area of Conservation, proposed or Special Protection Area or Ramsar site) or a Site of Special Scientific Interest (SSSI). |
| Parameter 11 | The activities shall not be carried out within Groundwater Source Protection Zone 1, or if a Source Protection Zone has not been defined then within 50m of any well spring or borehole used for the supply of water for human consumption. This must include Private Water Supplies. |

***Hazardous and Clinical Waste Risk Assessment Table (adapted from Standard Rules DR2008 No.25 v4)***

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| **What is at risk? What do I wish to protect?** | **What is the agent or process with potential to cause harm?** | **What are the harmful consequences if things go wrong?** | **How might the receptor come into contact with the source?** | **How likely is this contact?** | **How severe will the consequences be if this occurs?** | **What is the overall magnitude of the risk?** | **On what did I base my judgement?** | **How can I best manage the risk to reduce the magnitude?** | **What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).** |
| Local human population | Releases of particulate matter (dusts) and infectious micro-organisms (bioaerosols). | Harm to human health - respiratory irritation and illness. | Air transport then inhalation. | High | High | **High** | Treatment activities are likely to cause releases. There is potential for exposure if anyone is living or working close to the site (apart from the operator and employees) | Waste is only accepted in bags or containers. Reusable containers require disinfection before leaving site. Site surfaces and static containers require periodic disinfection. Waste treatment must take place within a building. | Low |
| Local human population | As above | Nuisance - dust on cars, clothing etc. | Air transport then deposition | Low | Low | **Low** | Local residents often sensitive to dust. | As above | Very low |
| Local human population, livestock and wildlife. | Litter | Nuisance, loss of amenity and harm to animal health | Air transport then deposition | Medium | Medium | **Medium** | Local residents often sensitive to litter. | As above. Appropriate measures could include clearing litter arising from the activities from affected areas outside the site. | Very low |

***Hazardous and Clinical Waste Risk Assessment Table (adapted from Standard Rules DR2008 No.25 v4) contd.***

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| Local human population | Waste, litter and mud on local roads | Nuisance, loss of amenity, road traffic accidents. | Vehicles entering and leaving site. | Low | Medium | **Low** | Road safety, local residents often sensitive to mud on roads. | As above (no appropriate measures defined). Appropriate measures could include clearing waste, litter and mud arising from the activities from affected areas outside the site. | Low |
| Local human population | Odour | Nuisance, loss of amenity | Air transport then inhalation. | High | High | **High** | Local residents often sensitive to odour. | SR - emissions shall be free from odour…. SR - The operator shall maintain and implement an odour management plan. | Low |
| Local human population | Noise and vibration | Nuisance, loss of amenity, loss of sleep. | Noise through the air and vibration through the ground. | Medium | Medium | **Medium** | Local residents often sensitive to noise and vibration | SR - emissions shall be free from noise and vibration..... Site has a noise management plan. | Low |
| Local human population | Scavenging animals and scavenging birds | Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity. | Air transport and over land | Medium | High | **High** | Permitted wastes include infectious materials and may attract scavenging animals and birds. | SR - emissions of substances not controlled by emission limits (including those from scavenging animals, scavenging birds and other pests) shall not cause pollution. | Low |

***Hazardous and Clinical Waste Risk Assessment Table (adapted from Standard Rules DR2008 No.25 v4) contd.***

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| Local human population | Pests (e.g. flies) | Harm to human health, nuisance, loss of amenity | Air transport and over land | Medium | High | **High** | Permitted wastes include infectious materials and may attract pests. | As above | Low |
| Local human population and local environment | Flooding of site | If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream. | Flood waters | Low | Medium | **Low** | Hazardous wastes washed off site will add to the volume and hazard of the local post-flood clean up workload. | management system (includes flood risk management). Release of hazardous wastes restricted by SR - maximum hazardous waste storage 10 tonnes, All liquids shall be provided with secondary containment.... (applies to wastes and non- wastes such as fuels). | Very low |

***Hazardous and Clinical Waste Risk Assessment Table (adapted from Standard Rules DR2008 No.25 v4) contd.***

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| Local human population and / or livestock after gaining unauthorised access to the waste operation | All on-site hazards: wastes; machinery and vehicles. | Bodily injury | Direct physical contact | Medium | Medium | **Medium** | Although some permitted waste types are hazardous, a medium magnitude risk is estimated. | activities shall be managed and operated in accordance with a management system that includes site security measures to prevent unauthorised access. Access to hazardous wastes restricted by maximum hazardous waste storage 10 tonnes, | Low |
| Local human population and local environment. | Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land. | Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of water or land. | Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches. | Medium | Medium | **Medium** | Although some permitted waste types are hazardous and some are flammable, a medium magnitude risk is estimated. | As above. management system (will include fire and spillages). | Low |
| Local human population and local environment | Accidental fire causing the release of polluting materials to air (smoke or fumes), water or land. | Respiratory irritation, illness and nuisance to local population. Injury to staff or firefighters. Pollution of water or land. | As above. | Low | Medium | **Low** | Risk of accidental combustion of waste is low. | As above (excluding comments on access to waste). Permitted activities do not include the burning of waste. | Low |

***Hazardous and Clinical Waste Risk Assessment Table (adapted from Standard Rules DR2008 No.25 v4) contd.***

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| All surface waters close to and downstream of site. | Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste e.g. containing suspended solids. | Acute effects: oxygen depletion, fish kill and algal blooms | Direct run-off from site across ground surface, via surface water drains, ditches etc. | Low | Medium | **Low** | Although permitted waste types include some hazardous liquids a low magnitude risk is estimated. | maximum hazardous waste storage 10 tonnes. all waste is in bags or containers so any spillage is likely to be small and detected quickly. secondary containment.... | Low |
| All surface waters close to and downstream of site. | As above | Chronic effects: deterioration of water quality | As above. Indirect run-off via the soil layer | Low | Medium | **Low** | Permitted waste types include hazardous liquids so harm may not be temporary and reversible. | As above | Low |
| Abstraction from watercourse downstream of facility (for agricultural or potable use). | As above | Acute effects, closure of abstraction intakes. | Direct run-off from site across ground surface, via surface water drains, ditches etc. then abstraction. | Low | Medium | **Low** | All waste is in bags or containers. Although permitted waste types include some hazardous liquids a low magnitude risk is estimated. Watercourse must have medium / high flow for abstraction to be permitted, which will dilute contaminated run-off. | As above, also the activities shall not be carried out within Groundwater Source Protection Zone 1, or if a Source Protection Zone has not been defined then within 50m of any well spring or borehole used for the supply of water for human consumption | Low |

***Hazardous and Clinical Waste Risk Assessment Table (adapted from Standard Rules DR2008 No.25 v4) contd.***

| Data and information | | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|---|
| **Receptor** | **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| Groundwater | As above | Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole. | Transport through soil/groundwater then extraction at borehole. | Low | Medium | **Low** | Permitted waste types include hazardous liquids so harm may not be temporary and reversible. | As above, also the activities shall not be carried out within Groundwater Source Protection Zone 1, or if a Source Protection Zone has not been defined then within 50m of any well spring or borehole used for the supply of water for human consumption | Low |
| Local human population | Contaminated waters used for recreational purposes | Harm to human health - skin damage or gastro-intestinal illness. | Direct contact or ingestion | Low | Medium | **Low** | Unlikely to occur, but might restrict recreational use. | SR (emissions of substances not controlled by emission limits). SR (if required) - emissions management plan. | Very low |
| Protected sites - European sites and SSSIs | Any | Harm to protected site through toxic contamination, nutrient enrichment, smothering, disturbance, predation etc. | Any | Low | Medium | **Low** | Waste operations may cause harm to and deterioration of nature conservation sites. | SR - activities shall not be carried out within 200m of a European Site or SSSI. (Distance criteria as agreed with Natural England/Countryside Council for Wales). | Low |

## 6.7 Animal By-Product Waste Storage and Transfer

***Animal By-Product Waste Risk Assessment Table (based on SR2008 No.17 v6).***

| | |
|---|---|
| Parameter 1 | Permitted activities - The storage of waste |
| Parameter 2 | Permitted waste types - Non-hazardous, including biodegradable animal manure, cooked food waste and animal wastes covered by the Animal By-Products Regulations. |
| Parameter 3 | Quantity of waste accepted at the facility: <75,000 tonnes per annum, including not more than 10 tonnes per day of animal waste. |
| Parameter 4 | All waste shall be stored and treated on an impermeable surface with sealed drainage system, with appropriate abatement system. |
| Parameter 5 | The only point source discharges to controlled waters are surface water from the roofs of buildings and from areas of the facility not used for the storage or treatment of wastes. The permitted activities must be outside groundwater Source Protection Zones (SPZs) 1 (inner) and 2 (outer). |
| Parameter 6 | If a Source Protection Zone has not been defined then the activity must also be outside 250 metres of any other well, spring or borehole used for the supply of water for human consumption |
| Parameter 8 | The activities shall not be carried out within 500 metres of a European Site (candidate or Special Area of Conservation, proposed or Special Protection Area or Ramsar site) or a Site of Special Scientific Interest (SSSI) |

***The risk assessment uses this model:***

| | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|
| **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| **What is the agent or process with potential to cause harm?** | **What are the harmful consequences if things go wrong?** | **How might the receptor come into contact with the source?** | **How likely is this contact?** | **How severe will the consequences be if this occurs?** | **What is the overall magnitude of the risk?** | **On what did I base my judgement?** | **How can I best manage the risk to reduce the magnitude?** | **What is the magnitude of the risk after management? (This residual risk will be controlled by Compliance Assessment).** |

***ABP Waste Storage - Risk Assessment Table (based on SR2008 No.17 v6) contd.***

| | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|
| **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| Release of micro-organisms (bioaerosols) | Harm to human health - respiratory irritation and illness | Air transport then inhalation | Low | Low | **LOW** | Storage may produce micro-organisms, but quantity in storage is Low, and the material is contained/ enclosed | Food waste and Cat 3 waste stored in enclosed vessels/ containers; refrigerated when required. Quantity is less than 50 t at one time due to regular despatches to treatment facility | Low |
| Releases of particulate matter (dusts). | As above. | Air transport then inhalation. | Low | Low | **LOW** | No dusts, powders or loose fibres Storage may produce dust but quantity in storage is Low. as above | As above | Low |
| As above | Nuisance - dust on cars, clothing etc. | Air transport then deposition. | Low | Low | **LOW** | As above | As above | |
| Releases of particulate matter (dusts) and micro-organisms (bioaerosols) | Gastro-intestinal illness | Air transport then deposition on garden fruit/vegetables and then ingestion. | Low | Low | **LOW** | quantity in storage is Low, material is contained/ enclosed | As above | Very Low |

***ABP Waste Storage - Risk Assessment Table (based on SR2008 No.17 v6) contd.***

| | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|
| **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| Releases of particulate matter (dusts) and micro-organisms (bioaerosols) . | As above. Includes eating crops grown within 250 metres of the site. | Air transport then deposition on commercial/wild fruit/vegetables then ingestion. | Low | Low | **LOW** | quantity in storage is Low, material is contained/ enclosed | As above | Very low |
| Litter | Nuisance, loss of amenity and harm to animal health | Air transport then deposition | Low | Low | **LOW** | No litter within waste types. Storage is enclosed. | all waste skips are covered and only stored for short term in small quantity. | Low |
| Waste, litter and mud on local roads | Nuisance, loss of amenity, road traffic accidents | Vehicles entering and leaving site | Low | Low | **LOW** | No litter within waste types. Storage is enclosed. | all waste skips are covered and only stored for short term in small quantity. | Low |
| Odour | Nuisance, loss of amenity | Air transport then inhalation | Low | Low | **LOW** | Waste type is likely to release odour. There is potential for exposure for anyone near to the site.<br><br>Storage is enclosed. | The storage of wastes under anaerobic conditions shall be prevented. emissions shall be free from odour at levels that would cause complaints. The management plan includes appropriate measure to reduce odour problems by minimising storage times and quantity in storage | Low |

***ABP Waste Storage - Risk Assessment Table (based on SR2008 No.17 v6) contd.***

| | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|
| **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| Noise and vibration | Nuisance, loss of amenity, loss of sleep | Noise through the air and vibration through the ground. | Low | Low | **LOW** | Some day-time noise loading and moving material or containers | Activities mean that emissions shall be free from noise and vibration outside of working hours. | Low |
| Scavenging animals and scavenging birds. | Harm to human health - from waste carried off site and faeces. Nuisance and loss of amenity. | Air transport and over land | Low | Low | **LOW** | ABP wastes are likely to attract scavenging animals and birds. | Permitted waste types include catering wastes and other wastes containing animal by-products. Access to wastes is restricted by separate controls under the Animal By-products regulations. Waste stored securely in enclosed containers or building. | Low |
| Pests (e.g. flies) | Harm to human health, nuisance, loss of amenity. | Air transport and over land | Low | Low | **LOW** | Insect pests can multiply on permitted wastes, particularly in summer months | As above | Low |
| Flooding of site | If waste is washed off site it may contaminate buildings / gardens / natural habitats downstream | Flood waters | Low | Low | **LOW** | Storage site is not in a flood risk zone; and drainage at the site leads away from the storage area. | SR -requires a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances (will include flood risk management). | Low |

***ABP Waste Storage - Risk Assessment Table (based on SR2008 No.17 v6) contd.***

| | | | Judgement | | | | Action (by permitting) | |
|---|---|---|---|---|---|---|---|---|
| **Source** | **Harm** | **Pathway** | **Probability of exposure** | **Consequence** | **Magnitude of risk** | **Justification for magnitude** | **Risk management** | **Residual risk** |
| All on-site hazards: wastes; machinery and vehicles. | Bodily injury | Direct physical contact | Low | Low | **LOW** | Storage, loading and unloading are low risk activities, done from machine/or forklift | SR - activities shall be managed and operated in accordance with a management system (will include site security measures to prevent unauthorised access). | Low |
| Accidental fire or Arson and / or vandalism causing the release of polluting materials to air (smoke or fumes), water or land. | Respiratory irritation, illness and nuisance to local population. Injury to staff, firefighters or arsonists/vandals. Pollution of water or land. | Air transport of smoke. Spillages and contaminated firewater by direct run-off from site and via surface water drains and ditches. | Low | Low | **Low** | Waste is not readily combustible. Permitted waste types are organic and non-hazardous | Short term storage of wastes, in small quantities and in containers | Low |
| Spillage of liquids, leachate from waste, contaminated rainwater run-off from waste with high organic content. | Acute effects; oxygen depletion, fish kill and algal blooms or Chronic effects; deterioration of water quality | Direct run-off from site across ground surface, via surface water drains, ditches etc. or as Indirect run-off via the soil layer | Low | Low | **Low** | There is a some potential for effluent leakage | Manure stored in building; Cat 3 wastes in sealed enclosed lidded, vessels/containers. Containers shall be provided with secondary containment.... Run-off restricted by storage of wastes to take place on an impermeable surface with sealed drainage. | Low |