

ENVIRONMENTAL MANAGEMENT SYSTEM

Dust & Emissions Management Plan (DEMP)
Reference: EMS-OP-03

Version 1 Dated 14.3.2023

**Weybeards Farm
Hill End Road
Harefield
Uxbridge
UB9 6LH**

DOCUMENT CONTROL SHEET

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1. Introduction

1.1 Purpose

The purpose of these procedures is to guide staff and contractors in the safe conduct of their duties in a manner which controls the environmental impacts of the company's operations, with specific reference to dust management.

With reference to the guidance, a dust management plan is required if a site carries out an activity and is within a certain location. The site is a household, commercial/industrial waste transfer/treatment facility. The location requirements are:

- If a site is in, or within 2km of air quality management area for PM10.
- Or within 500m of a sensitive receptor such as a home, school, hospital, food preparation facility of similar.

The site is not in or within 2km of an Air Quality Management Area (AQMA).

The site is located within 500m of sensitive receptors.

This version has been prepared to support an application to vary an existing Environmental Permit. The current permit allows the operator to receive and process waste cooking oil. This operation has ceased, and the storage tanks have been removed from the site.

The risk assessment has shown that the operations will not cause dust and will not cause harm or nuisance to receptors. A Dust Management Plan is considered unnecessary in this case but has been prepared to support an application to vary the Environmental Permit.

1.2 The Operator

The operator has been involved with waste management for many years. The current permit specifically allows the receipt, storage and treatment of waste cooking oil, (EWC 200125 edible oil and fat). The permit allows the operator to manage up to 25,000 tonnes per annum.

This activity will be removed from the permit and the operations changed to allow the receipt, storage and treatment of waste collected from the operators' skip collection service.

The current environmental permit was issued in November 2011 and permitted the receipt, storage and treatment of waste cooking oil. The operations continued without any significant compliance issues and no dust complaints.

1.3 Scope

These Operational Procedures cover:

- Operations involving non-hazardous waste
- Treatment of non-hazardous waste

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1.4 Management System

The Management System covers all aspects of operations and aims to effectively manage the impacts of the business on the environment. The key documents include:

- a) Documents: Procedures to set out how to undertake operations and checking for any issues.
 - EMS-OP-01 Operational Procedures
 - EMS-OP-02 Noise Management Plan
 - EMS-OP-03 Dust Management Plan
 - EMS-OP-04 Odour Management Plan
 - EMS-FPP-01 Fire Prevention Plan
- b) Forms on which to record information and provide evidence of the system functioning properly.

Cross referencing to specific aspects in the EMS has been made in this report.

All documents will be kept in the site office.

1.5 Site Location

The procedures relate to the permitted activities at Weybeards Farm, Hill End Road, Harefield, Uxbridge, UB9 6LH.

The site is in a rural setting, within the former agricultural buildings at Weybeards Farm.

The nearest residential properties are within the ownership of the operator and are lived in by family members. The nearest other residential property is Primrose Cottage.

Old Park Wood SSSI surrounds the site to the west and south. Beyond which, there are residential houses on Bellevue Terrace, which is some 320m south west of the site.

Maple Lodge Sewage Treatment Works located 570m north west of the site. This is a large Thames Water works.

The site is not in or within 2km of an Air Quality Management Area (AQMA).

There are no nearby monitoring stations.

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2 Operations

2.1 Waste Deliveries to Site

At the time of booking, all customers will be notified about the waste acceptance procedures and will be provided a list of wastes that are not permitted at the site. The prohibitive list includes asbestos, fluorescent tubes, paint and aerosols, clinical and medical waste, oils, and hazardous waste. Customers will also be informed that dusty waste is not permitted.

If a customer requires mattresses, tyres and fridge freezers to be collected, separate arrangements are made for these items to be collected separately and taken to an appropriate facility.

The customer will be informed that the following wastes will be permitted, paper, cardboard, garden waste, wood, plastic, metal, hardcore, rubble, bricks, tiles and oils. Any plasterboard must be bagged and placed on the top of the skip.

The operator will request details about the nature of the waste to be collected.

The site will predominantly accept mixed construction waste (EWC170904). Skip waste is a mixture of waste generated through construction and refurbishment projects. It can contain cardboard, light plastic, rigid plastic, wood, metal, textiles (carpets, curtains), furniture, bricks, concrete, soils and garden waste.

On rare occasions, a skip could contain single waste streams, for example wood, or garden waste, or furniture. Therefore, additional codes will be included to cover those scenarios.

At the point of collection, an initial visual inspection of the waste will be undertaken by the driver to check for conformance. This will ensure that only acceptable waste will be loaded on to the vehicle. Any of the prohibited items identified above will be removed at the customer's property.

For collections which contain solely soils or concrete/bricks, the operator would seek to transfer these wastes directly to an appropriate site, permitted to treat these waste streams.

Table 1 provides the list of wastes that could generate dust.

2.2 On Site Waste Acceptance

The driver will arrive at the site and provide Waste Transfer Notes to the site office. The driver will then be directed to the building. The vehicle will be unsheeted once inside the building. The waste will be visually checked as it is unloaded to ensure that the waste is acceptable.

The driver will check the vehicle wheels before exiting the building and will use the hose and brush if required.

Any incidents of non-conformance will be recorded in the Non-Permitted Waste Form EMS-FR-01 and corrective action taken.

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2.3 Overview of Waste Processing and Dust Controls

The site layout is shown on Drawing No HEP-WEF-LAY-01. The waste codes set out in Table 1 provide the main list of waste to be accepted and assigns a risk category for dust.

The waste processing activities will be straightforward sorting and separation. There will be a small trommel screen to removed fines. The trommel will remove fines which will be stored in a bay beneath the trommel. There will be a small picking station separating cardboard and wood into containers beneath the conveyor belt. There will be two blowers, transferring lightweight waste into a caged bay. A magnet will remove metal, with the remining hardcore discharging into a bay at the end of the process.

Table 1 –Wastes Accepted at the Site that could generate Dust

EWG Code	Description	Area in Site	Treatment Activities
17 01 01	Concrete	Hardcore Bay	Separated and Stored.
17 01 02	Bricks	Hardcore Bay	Separated and Stored.
17 01 03	Tiles and ceramics	Hardcore Bay	Separated and Stored.
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	Hardcore Bay	Separated and Stored.
17 02 01, 19 12 07, 20 01 38	Wood	Container	Separated and Stored in a container.
17 04 07, 19 12 02, 19 12 03, 20 01 40	Metal	Container	Separated and Stored in a container.
17 05 04	Soils and Stones	Reception Area	Stored within building*
17 08 02	Gypsum based construction materials	Container	Separated and Stored in a container.
17 09 04	Mixed construction and demolition wastes other than those mentioned in 170901, 170902 and 170903	Reception Area	Manual/mechanical sort, followed by trommel.
20 02 02	Soil and stones	Reception Area	Separated and Stored in a container*
20 02 03	Other non-biodegradable waste (Garden waste)	Reception Area	Separated and Stored in a container*

*If the load contains this as a single waste stream, it is likely to be diverted to a facility that treats this waste only. Otherwise, a spare container would be used to store this.

The entire operational area is concreted.

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The incoming mixed waste will be deposited within the building.

The waste processing building is 15m x 30m. It is a steel portal framed construction that is open on the eastern and northern elevations, which both face into the site. The roof is steel clad, with occasional roof lights.

The western and southern elevations comprise of a 3m high concrete panel wall, topped with wood cladding.

The building floor is approximately 0.5m below the surrounding ground level.

The second building is approximately 9m x 18m. This is a fully enclosed building with approximately 3m high concrete wall surround, topped with steel profiled cladding sheets, with a steel clad roof. It has three roller shutter doors on the northern elevation. This building will be used for baling recyclable waste.

All separated wastes, wood, plastic, plasterboard, cardboard and metal will be stored separately for onward processing at authorised facilities.

Waste Treatment

The waste will be unloaded into the main processing building. There will be an initial sort to remove large items such as concrete, wood and metal. Plasterboard will also be removed at this stage. It will be placed into a container. Large cardboard items will also be placed in a separate container.

Most of the sorting will be carried out manually or using a machine. The remaining waste will then be transferred into a trommel. The trommel will remove fines which will be stored beneath the trommel. There will be a small picking station separating cardboard and wood into containers beneath the conveyor belt. There will be two blowers, transferring lightweight waste into a caged bay. A magnet will remove metal, with the remaining hardcore discharging into a bay at the end of the process.

Any black bags will be placed in the residual waste bin for off-site removal.

All separated wastes, wood, cardboard, plasterboard, and metal will be stored separately for onward processing at authorised facilities. Dry recyclables may be baled in the Baling Building. The waste will be transferred in a container to the other building. The door will be opened, and the waste unloaded into a bay. It will be baled, with the bales stored inside this building. When loading, a curtain sided trailer will park alongside the building and a fork lift truck will load the bales directly into the trailer.

The annual permitted throughput of the facility will be 25,000 tonnes.

The process capacity of the trommel will be 50 tonnes per day.

The maximum amount of mixed waste that will be on site at any one time will be 500 tonnes.

The maximum storage limits are set out in Table 2. This relates to all waste being treated and not just waste that could generate dust.

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Table 2 Storage Limits (Cross Refer to Drawing No HEP-WEY-LAY-01)

Waste Type	Storage	Storage Area	Max. Height	Max. Volume	Storage Time (Maximum)
Waste Sorting Area (reception)	Loose in central part of site for sorting*	4mx8m 32m ²	3m	20m ³	24-48 Hours
Residual (unrecyclable plastics, carpets)	Container	2.25m x 6.1m 14m ²	2.4m	30m ³	2 Weeks
Fines	Bay	3m x 2 6m ²	1.8m	11m ³	1 week
Metal	Container	2.3m x 3.9m 9m ²	1.9m	17m ³	2 Weeks
Cardboard	Container	2.3m x 3.9m 9m ²	1.9m	17m ³	2 Weeks
Wood	Container	2.3m x 3.9m 9m ²	1.9m	17m ³	2 Weeks
Lightweight waste x2	Cage	3m x 3m 9m ²	1.9m	17m ³	1 week
Plasterboard	Container	2.3m x 3.9m 9m ²	1.9m	17m ³	2 Weeks
Hardcore	Bay	3m x 4m 12m ²	4m	40m ³	2 Weeks

*The waste will be sorted as it is received. The maximum storage volume is based on a three skip loads returning at the end of the day.

Table 3 – Storage Limits for Dry Recyclables

Waste Type	Storage	Storage Area	Max. Height	Max. Volume	Storage Time (Maximum)
Cardboard	Container	2.3m x 3.9m 9m ²	1.9m	17m ³	2 Weeks
Cardboard	Container	2.3m x 3.9m 9m ²	1.9m	17m ³	2 Weeks
Bales	Loose	2m x 4m 8m ²	4m	20m ³	2 Weeks
Bales	Loose	2m x 4m 8m ²	4m	20m ³	2 Weeks

The baling operation will be carried in a separate fully enclosed building. This activity is unlikely to generate dust and therefore has not been considered any further in this assessment.

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3. Dust and Particulate Management

3.1 Responsibility for Implementation of the DEMP

The Technically Competent Manager (TCM) has responsibility for ensuring these procedures are adhered to which includes communication with staff and contractors, and the provision of adequate training.

The Technically Competent Manager is responsible for updating and re-issuing these procedures as necessary and ensuring all staff are trained in new procedures. The TCM will be the main point of contact for ensuring implementation of this plan. In their absence, the Site Supervisor will be responsible for implementation.

All staff will be trained in these procedures. Staff training is set out in EMS-OP-01. All staff will be trained to a standard which enables them to perform the responsibilities. The TCM is responsible for delivering training and maintaining records. Training is reviewed on an annual basis.

A record of staff training will be kept for each staff member which includes inductions to new processes and procedures as needed. EMS-FR-03.

If there are any changes to the operation which affect the dust management at the site, the TCM will carry out revised training and update the Management Plan accordingly.

The DEMP will be reviewed on an annual basis or sooner if requested by the EA. It will also be updated if the operator changes the operation.

The operator is a family run business. The waste collected will be from their own waste collection business and therefore the operator will have full control over the waste inputs and treatment. The operator's family live at the site and have been part of the local community for many years.

3.2 Sources and Control of Fugitive Dust/Particulate Emissions

The following are potential sources of dust emissions:

- Vehicles entering and/or leaving the site with mud or debris on their wheels – low-medium probability due to onsite controls
- Waste unloading (Reception Area) – medium probability of dust generation, as materials being separate will be whole units, e.g. wood, plastic, cardboard.
- Loading process plant – medium probability of dust generation, as materials being separated will be whole units, e.g. wood, plastic, cardboard.
- Processing Trommel – medium probability of dust generation. Fines are transferred immediately into a contained bay.
- Hardcore Loading - medium probability of dust generation due to nature of material.

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- Vehicles leaving the site – low probability as vehicles will be sheeted. Vehicles also travel over 440m to reach the highway.
- Particulate emissions from the exhaust of vehicles and plant on site.

It is also important to identify other potential sources of dust emissions in the locality. These are provided in Table 4.

Table 4 Sources of Dust and/or other Emissions

Source	Address	Type of Business	Distance from site boundary (m)
General	Surrounding	Agricultural – harvesting, cutting, tractors on local roads	Adjoining
HS2	Denham Way	Major Infrastructure Development	1.4km South West

The HS2 project is a major infrastructure project. This is located upwind of the site and has the potential to generate significant volumes of dust. (Blue Dot is the application site).



Environment Agency Technical Guidance Note TGN M172 (TGN M17) discusses the pathways for the transport of dust in the context of waste facilities and explains the differentiation between the terms dust and particulate matter as follows:

“The terms dust and PM are used fairly interchangeably, although in some contexts one term tends to be used in preference to the other, as summarised below.

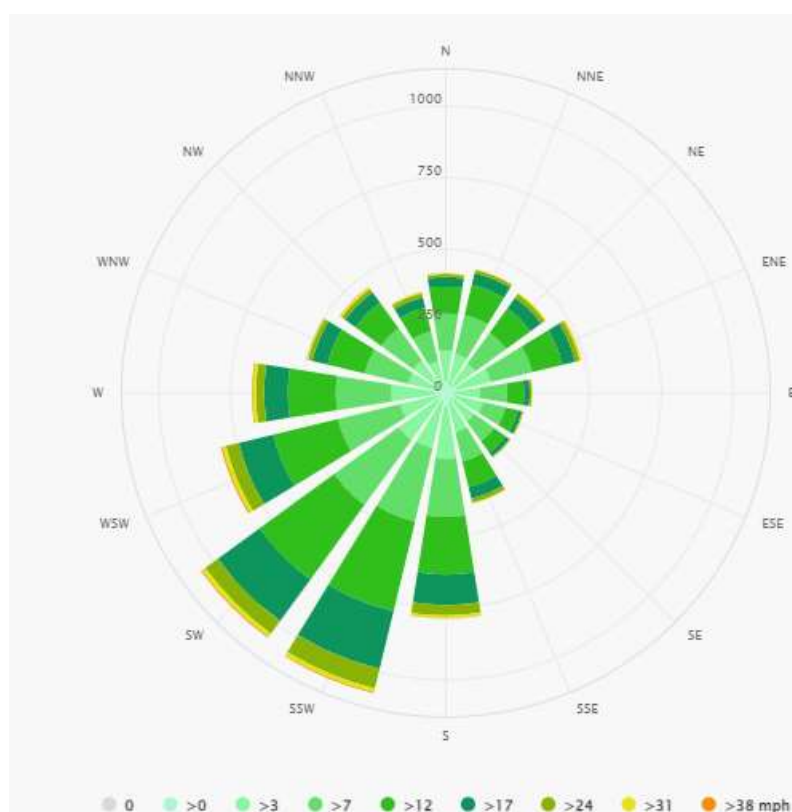
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The dust will be generated by an emission source on the site and released to the air, for example by the tipping of waste from a lorry onto a stockpile. Once the dust is in the air it is termed suspended PM and will spread out from the source and be carried on the wind away from the site."

With reference to the wind rose for the site, the prevailing wind direction is from the west south west or south west and therefore areas to the east north east or north east of the site are down prevailing wind of the site.

Windrose data has been obtained from the Met Office for Heathrow Airport.

Figure 1 - Wind Rose Data¹



Particle size is the key parameter when considering the transport of particulate matter in air. Coarse particles have much faster settling rates than finer particles and will therefore settle out as deposited dust generally close to the source. The finer particles may remain airborne for longer and travel further from the source.

Based on information published by DETR3 large particles (>30µm) mostly deposit within 100m of the source, intermediate-sized particles (10µm to 30µm) are likely to travel up to

¹ <https://www.metoffice.gov.uk/services/transport/aviation/regulated/airfield-climate-stats#Heathrow>

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200m to 500m and smaller particles (<10µm) can travel up to 1km from the source, although very small particles can travel much further. TGN M17 states that:

'PM10 emissions from industrial combustion processes and road transport are considered to contain more fine material (i.e. PM2.5) than, for example, mechanically-generated particulates from quarries and construction sites'

'Waste management operations that involve mechanical generation of PM rather than combustion, are also likely to release predominantly coarse particles.'

For the purposes of identifying the nearest receptors, a search area of 1km has been used.

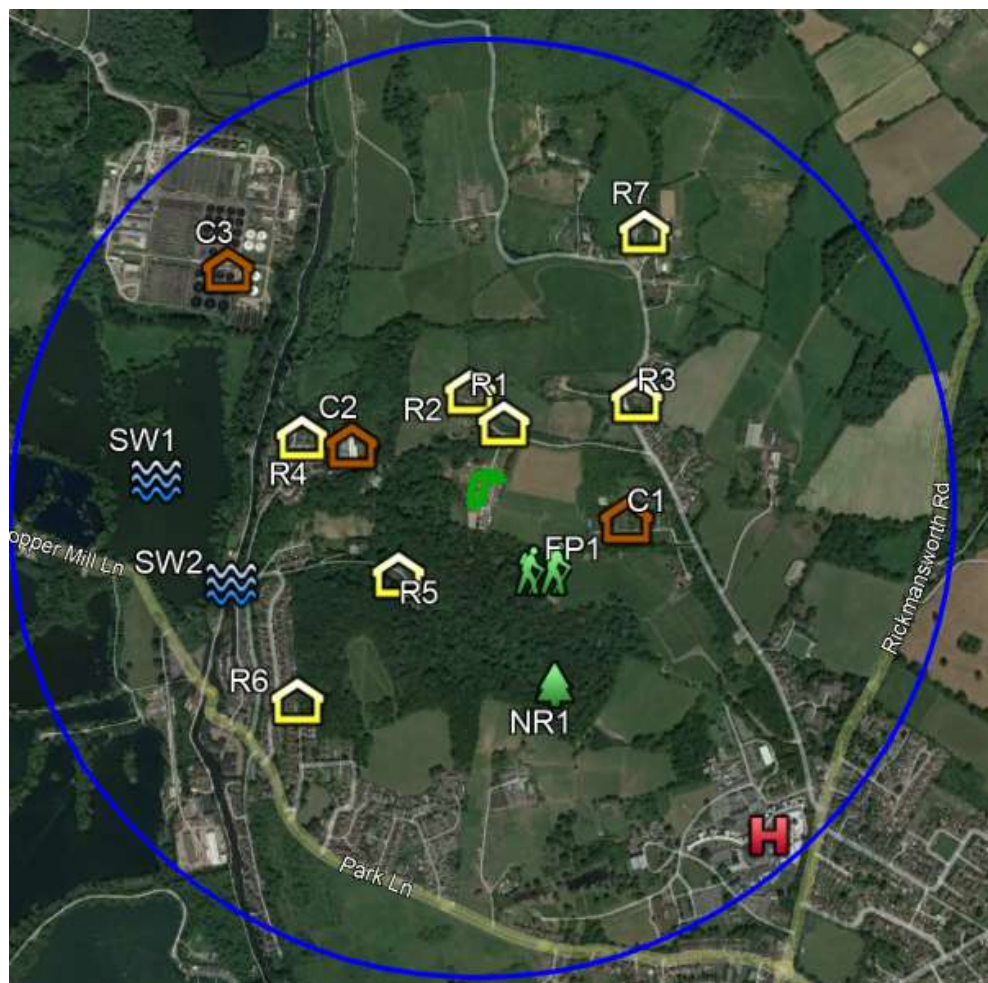
Figure 2 shows the site and broad location of the main receptors within 1km. Table 5 provides a description of those receptors and the distance and direction from the site. The distance has been measured from the permit boundary, at the closest point.

In terms of the sensitivity to dust the following has been adopted:

Type of Receptor	Sensitivity
Residential, schools, hospitals, nursing homes, Statutory Designations (SSSI, SPA, SAC)	High
Industrial premises, recreational grounds, Non Statutory Designations (Local Wildlife Sites)	Medium
Roads, Industrial premises (waste)	Low

There may be other unique receptors that do not fall within any of the above categories. These have been considered separately depending on the nature of the business and use. People on footpaths are transient receptors.

Figure 2 - Site Setting and Receptors (The permitted site is shown with a green boundary). Blue shows 1km radius from centre point of site.



South Westerly
Wind Direction

Table 5 – Receptors

Receptor	Legend	Type	Sensitivity	Distance and Direction from Permitted site
House (unnamed and Farmside Cottage)	R1	Residential	High	60m -80m North (both with operator's control and occupied by family members)
Primrose Cottage (within farm holding)	R2	Residential	High	108m North West
Hill End Road	R3	Residential	High	300m North East
Canal Way	R4	Residential	High	340m West
Bellevue Terrace	R5	Residential	High	200m South West
Barrington Drive	R6	Residential	High	400m South West
Springwell Lane	R7	Residential	High	540m North East
The Harefield Care Home	C1	Care Home	High	250m East
Deep Contractors	C2	Commercial	Low	250m West
Maple Lodge Water Treatment Works	C3	Commercial	Low	580m North West
Harefield Hospital	H	Hospital	High	760m South East
Old Park Wood Nature Reserve/Old Park Wood SSSI	NR1	Nature Reserve	Medium-High	<5m West
Tumbling Bay Lake	SW1	Surface Water	Medium	520m West
River Colne	SW2	Surface Water	Medium	450m West
Hillingdon Trail	FP1	Public Right of Way	Low-Medium	100m South

Note - Footpath users are transient receptors.

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2.2.1 Mobile Plant

Nitrogen Dioxide gas is a by-product of internal combustion engines and the site uses several items of plant with internal combustion engines. The process equipment will be powered by 3-phase electric.

A list of plant and machinery will be provided prior to operations commencing. Wherever possible the operator will provide modern plant and machinery and replace older models with new.

All skip vehicles will meet Euro VI engines.

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3.3 Dust Suppression

All waste will be received and treated within a building. This will minimise the likelihood of dust emissions escaping beyond the site boundary and being transferred to impact a receptor.

The building is open fronted on the eastern and northern elevation. These both face within the site, and the southern and western elevations will protect operations from the predominant south westerly wind.

The trommel will be positioned on the far side of the building, furthest from the openings.

It is proposed to install a dust suppression system around the internal wall of the building, as indicated on Drawing No. HEP-WEY-MON-01.

The system will utilise mist spray technology, that provides a fine spray on the target areas. The spray captures dust particles, causing them to settle and prevent them becoming air borne. This system also prevents the waste becoming too saturated and keeps workers dry.

The system will be activated whenever the trommel is in use and for unloading/loading waste during dry weather conditions.

There will be a dust water tank installed at the site. This will be fed by roof water and topped with mains water to maintain supply. It is proposed to install a 10,000 litre capacity tank.

The following procedures will be implemented to prevent emissions to air from waste handling.

- There will be storage bays provided for the fines and hardcore.
- A freeboard height limit will be set at 0.5m for waste bays.
- All other waste will be stored in containers.
- The building will be inspected daily to ensure that it remains intact. Any damage will be reported to the Site Management immediately and repairs instigated within 48 hours. The site will have a night guard for security out of hours.
- Vehicles leaving the site will be checked and if necessary, a hose and brush will be used to clean the wheels. The site and access route are concreted. There is a 440m internal road to reach Hill End Road.
- The external yard area will be cleaned daily.
- Speed restriction of 5mph on site limit dust arising from waste vehicles and mobile plant.
- The site will only receive waste collected by the operator. The site based staff will oversee vehicles movements to prevent tracking through deposited waste.
- As part of the site daily checks, the Site Manager will check the entire site for evidence of any debris and arrange cleaning as required. This will be carried out twice per day which is proportionate to the scale.

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- The site operator lives at the site and is available to carry out checks at their property (located 60m north west of the site). Any dust emissions will be reported to the site based staff.
- Daily cleaning of the site to prevent any waste accumulating at the site.
- Dust suppression installed building.

No suppression system will be required for the baling building. The waste materials in this building will need to be kept dry.

3.4 Visual Dust Monitoring

The external yard area will be checked daily for visible signs of dust. This will be carried out twice per day and will be recorded on the daily check form (EMS-FR-04). A record of the weather conditions will be made in the site diary daily. Two monitoring locations will be checked on a formal basis, see Drawing HEP-WEY-MON-02. All site operatives will check the site continuously throughout their working day. The two monitoring points shown on the plan will be checked twice per day by the site manager to ensure operations are not generating dust.

The site diary will also contain details of the various operations that take place each day. The site manager will ensure dust management measures are undertaken as appropriate to the site operations and current conditions.

No waste processing or storage will take place outside.

The TCM will be responsible for the operation of the dust management plan and all site operatives will be trained, and required, to take necessary mitigation action. There is also a site supervisor to provide the same level of cover as the TCM. They will also be required to take preventative action to avoid dust by clearing any spillages of materials, maintaining water suppression equipment, repair of defective water suppression equipment, maintaining roads, keeping clean and in good condition and by washing machinery to keep all plant clean and dust or mud free. Additionally, any contractors working on site will be made aware of the provisions of dust management and be required to comply with relevant provisions as appropriate to any work they are undertaking on site.

As all waste treatment operations will take inside the building, it is unlikely that weather conditions will hamper those operations. As a result, it is considered unlikely that waste processing activities will need to be stopped during windy weather conditions.

The waste will be sorted daily. During dry weather conditions, if the hardcore storage bay or fines bay are nearing full, the bay will be covered overnight to prevent any dust escaping during this time. There will be no risk associated with dust emissions being generated out of hours.

In the event of complaints being received, the complaint procedure will be implemented with form EMS-FR-02.

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Tables 6 and 7 provide the risk assessment for dust and the remediation/control measures.

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Table 6: Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of impact	Control Measures
Unloading and processing waste	Tracking dust on wheels and vehicles	Local Roads	Visual soiling, also consequent resuspension as airborne particulates	Vehicles will be checked prior to leaving the site and will be cleaned if mud/debris is noticeable on the wheels or chassis. Each driver will be responsible for this process. This will take place before the vehicle leaves the building, as any debris will be contained within the building. As a vehicle leaves the building, there is a concrete apron and approximately 440m internal concrete road before entering the public highway. As the unloading of vehicles is controlled by operatives it is unlikely that vehicles will be directed in a manner that results in waste being tracked out. A tractor / trailer will be deployed as necessary to clean the yard and access road. The waste will be unloaded and processed inside the building.
	Atmospheric dispersion	Nearby industrial premises (workers and pedestrians).	Visual soiling and airborne particulates	Vehicles will only be unsheeted when ready to discharge. The waste will be unloaded and processed inside the building. Drop heights will be kept to a minimum and dust suppression activated to prevent emissions leaving the building.
	Atmospheric dispersion	Residential properties	Visual soiling and airborne particulates	As above, but also the distance and intervening topography between the site and these receptors will reduce any impact. There are large agricultural barns on site, separating the operations from nearest receptors.
Debris	Falling of lorries	Local Roads	Visual soiling, and resuspension as airborne particulates	All vehicles delivery and collecting waste will be sheeted. There is a 440m internal route before vehicles reach the local highway. A hose and brush will be used to clean the wheels and clean the yard. A tractor / trailer will be deployed as necessary to clean the yard and access road.
Vehicle exhaust emissions	Atmospheric dispersion	All	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength

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Source	Pathway	Receptor	Type of impact	Control Measures
Non road going machinery exhaust emissions	Atmospheric dispersion	Local Environment	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength.

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Table 7 - Measures used on site to control Dust/Particulates

Abatement Measure	Description / Effect	Overall consideration and implementation
Preventative Measures		
Enclosure within a building	Creating a solid barrier between the source of dust and particulates and receptors is likely to be the most effective method of control, provided that the building entrances and exits are well managed.	<p>All waste will be received and sorted inside the building. Whilst this is open on two sides, it has a roof and the contained sides (southern and western) are constructed with a 3m high concrete wall, topped with wooden cladding.</p> <p>Consideration to enclosing another side will be made, but as the site is not in an AQMA and there is a low risk to other receptors based on intervening topography, the scale and nature of operations, this is considered disproportionate.</p> <p>The building integrity will be checked daily as part of the EMS. Any damage will be reported to the TCM and arrangements made within 48 hours to repair the damage. Additional control measures may be required during this time.</p> <p>The mist air system will be used to control emissions at source inside the building.</p>
Negative pressure extraction	Within enclosed buildings, controlled extraction can be undertaken to ensure a constant negative pressure relative to the outside air. This system should	This is not necessary, due to the scale and nature of the operations. The risk assessment and controls will prevent dust emissions leaving the site.

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Abatement Measure	Description / Effect	Overall consideration and implementation
	prevent the emission of particulates from any openings in the building. Extracted air should be treated through a suitable filtration system prior to discharge to atmosphere. This method is more frequently applied for odour control.	
Dust Extraction Systems	A large variety of abatement technologies exist for the removal of dust and particulates from a flowing gas and have typically been applied to combustion plants and other sites where controlled emissions of particulates occur. These include Electrostatic Precipitators (ESPs), wet scrubbers, baghouses (bag filters), viscous media (e.g. oil) filters and gravitational settling. Although not all of these may be appropriate for dust and particulate suppression at waste management sites, and they cannot be applied to controlling external fugitive emissions, they	The controls provided are considered appropriate to prevent dust escaping the building.

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Abatement Measure	Description / Effect	Overall consideration and implementation
	may be effective when coupled with local exhaust extraction, ventilation or negative pressure extraction systems from enclosed buildings to remove dust and particulates from the airstream.	
Site / process layout in relation to receptors	Locating particulate emitting activities at a greater distance and downwind from receptors.	Waste processing will take place within a building. The pathway between the source and receptor is prevented using this infrastructure. This is not necessary, due to the scale and nature of the operations. The risk assessment and controls will prevent dust emissions leaving the site.
Site speed limit, 'no idling' policy and minimisation of vehicle movements on site	Reducing vehicle movements and idling should reduce emissions from vehicles. Enforcement of a speed limit may reduce re-suspension of particulates by vehicle wheels.	<p>The site speed restrictions will be 5mph for all vehicles and mobile plant.</p> <p>In the event that vehicles are held up to unload, they will be asked to switch off their engines.</p> <p>Banksman will be used to ensure the efficient flow of traffic, control the door opening/closing, and minimise waiting times and reducing unnecessary vehicle manoeuvring.</p> <p>The site has a large concrete area and is remote from the highway, to avoid queueing. This is a family run business and the site will be used to manage waste collected by the operator only. The company has full control of the waste vehicles and operations.</p>
Minimising drop heights for waste. Use of	Minimising the height at which waste is handled should reduce	All waste will be received and processed in the building which will protect the waste from being blown and dispersed by the wind. The

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enclosed chutes for waste drops/end of conveyor transfers and covered skips / storage vessels.	the distance over which debris, dust and particulates could be blown and dispersed by winds. Enclosing processes will further reduce dispersion.	process equipment will be set at defined heights. The loading operator will reduce the height of the drop when placing waste into the equipment.
Sheeting of vehicles	Prevents the escape of debris, dust and particulates from vehicles as they travel.	All incoming loads will be unsheeted once ready to discharge. All waste being removed will be in sheeted vehicles.
Good Housekeeping	Having a consistent, regular housekeeping regime will ensure the site is regularly checked and issued remedied to prevent and remove dust and particulate build-up	As part of the daily Site Checks, the TCM carries out 2 hourly checks of the site, but all staff are trained to monitor for any debris or dust on the site and instigate cleaning. The site is cleaned at the end of each working day. On a weekly basis (typically on Saturday), a more detailed clean will take place which will include the process equipment. A hose and brush will be used to clean the yard. A tractor/trailer will be deployed as necessary to clean the yard and access road.
Hosing of vehicles on exit	May remove some dirt, dust and particulates from the lower parts of vehicles.	All vehicles will be checked when leaving the site to ensure vehicle wheels are cleared. All staff will be trained to check on the vehicles. A hose and brush will be used to clean the wheels. This will take place in the budling, which is at a lower elevation to the surrounding land. Any debris will be captured in the building and containerised. All road vehicles will be washed weekly.
Install a wheel wash	Provides a high pressure wash of vehicle wheels and lower parts (including under body) using a	This is not currently proposed. There will be a hose and brush provided to clean wheels. The entire site is concreted which will allow regularly cleaning. There is 440m of internal concrete road between

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	series of jet sprays. More effective if vehicles drive through the wheel wash slowly in order that there is sufficient time for dirt to be removed	the waste building and highway. The vehicles will only pass houses occupied by family members. Any mud or debris will be reported to the site manager.
Ceasing operation during high winds and/or prevailing wind direction	Mobilisation of dust and particulates is likely to be greater during periods of strong winds and hence ceasing operation at these times may reduce peak pollution events.	<p>All waste operations will take place inside the building and are not expected to be affected by the wind.</p> <p>The prevailing wind is from the south west. The building is sealed on the southern and western elevations which will provide protection against the prevailing wind. The dust suppression system will be activated during operations to prevent the dust becoming airborne. Any dust that could escape from the building will either blow back into the building or towards a large agricultural barn opposite the waste building.</p> <p>All these measures have been implemented to prevent any dust leaving the building.</p>
Easy to clean concrete impermeable surfaces	Creating an easy to clean impermeable surface, using materials such as concrete as opposed to unmade (rocky or muddy) ground within the site and on site haul roads. This should reduce the amount of dust and particulate generated at ground	<p>Operational area and site access are concreted. The site will use a tractor/trailer to keep the site clean. This is permanently based at the site and will be deployed if there are obvious signs of mud on the surface.</p> <p>At the end of each working day, the trailer will be deployed to clean the site.</p> <p>If considered necessary, the operator may deploy a road sweeper to clean the operational yard.</p>

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	level by vehicles and site activities.	Daily checks as part of the EMS.
Minimisation of waste storage heights and volumes on site	Minimising the height at which waste is handled should reduce the distance over which debris, dust and particulates could be blown and dispersed by winds. Reducing storage volumes should reduce the surface area over which particulates can be mobilised.	Storage height limits are set out in this Management Plan. All waste will be received and processed in the building which will protect the waste from being blown and dispersed by the wind. The process equipment will be set at defined heights. The loading operator will reduce the height of the drop when placing waste into the equipment or when loading HGVs.
Reduction in operations (waste throughput, vehicle size, operational hours)	Reducing the amount of activity on site, including no tipping, shredding, chipping or screening of high risk loads during windy weather as well as associated traffic movements should result in reduced emissions and re-suspension of dust and particulates from a site.	The internal operations are unlikely to be affected by the weather conditions. The building orientation will protect the inside from the prevailing wind. The prevailing wind is from the south west. The dust suppression system will be activated during operations to prevent the dust becoming airborne. Any dust that could escape from the building will be blown into the building or will be towards a large agricultural barn. All these measures have been implemented to prevent any dust leaving the building.
Use of wheel wash	Vehicles would exit the site via a wheel wash.	It is considered unnecessary given the controls in place and the distance that vehicles travel before reaching the highway.
Remedial Measures		

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Netting / micro netting around equipment	Erecting netting around equipment that could give rise to large amounts of dust and particulates may be effective within the site boundary and prevent their dispersion off-site / their re-suspension within the site.	All equipment will be inside the building. The use of netting may be considered around some storage bays to provide containment overnight. However, their use is considered unnecessary for the day to day operations.
On-site sweeping	Sweeping could be effective in managing larger debris, dust and particulates but may also cause the mobilisation of smaller particles. Road sweeping vehicles damp down dust and particulates whilst brushing and collecting dust and particulates from the road surface, particularly at the kerbside.	The site will be cleaned daily. A tractor/trailer will be used for cleaning the yard. A road sweeper will be deployed as necessary to clean the external area and entrance.
Site perimeter netting / micro netting	Erecting netting around the site perimeter may capture released debris and dust and particulates prior to it being dispersed off-site.	The use of netting may be considered around some storage bays to provide containment overnight. However, their use is considered unnecessary for the day to day operations.

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Water suppression with hoses & water jets	Damping down of site areas using hoses can reduce dust and particulate re-suspension and may assist in the cleaning of the site if combined with sweeping.	<p>The site will use a tractor/trailer to keep the site clean. This will be permanently based at the site and will be deployed if there are obvious signs of mud on the surface.</p> <p>At the end of each working day, the trailer will be deployed to clean the site. It will be filled with water at the end of the day in preparation for use the next working day.</p> <p>A hose and brush will be provided by the site entrance. This will be used to clean vehicle wheels before exiting the site.</p>
Water suppression with mist sprays	Installation of mist sprays around sites, at building entrances/exits and within buildings at point source emissions like conveyors, trommels etc. It can also assist in the damping down of dust and particulates, therefore, reducing emissions from site.	<p>A dust suppression system will be installed to control emissions at source. The system will be directed towards the operational areas with the greatest potential to generate dust, the hardcore bay and trommel. A water tank will be provided outside of the building. Roof water will be used to fill the tank, topped up with mains water during dry spells.</p> <p>The dust suppression system will be checked daily. Staff will be trained to use the system. The dust suppression system will be activated when sorting plant is operational.</p>
Shaker grids	Similar to cattle grids, these are installed at a site entrance and exit. The movement of vehicles over the grids shakes dust and particulates from the wheels, thus removing them before vehicles enter the site.	The site is fully concreted and therefore this is not required. Wheel washing will take place before vehicles exit the site.

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Water Cannons	Water cannons provide a means for delivery of powerful water streams from a water truck. With variable nozzles, the spray pattern can be controlled and varied between jet and fog. Typical water flows are up to 5000 litres per minute. Water cannons are most often used for fire protection, mining operations, heavy machinery wash down, cleaning and dust and particulate abatement.	Water cannons are usually deployed on sites that store materials outside, for example construction waste and aggregates. These are unnecessary at this site.
Screening of buildings / reducing large apertures using plastic strips	Installing plastic strips to cover entrances/exits to buildings may reduce emissions of dust and particulates dispersing through doorways.	Plastic strips at waste sites are ineffective and are typically damaged by the plant movements.
Application of CMA / chemical suppressant	Diluted Calcium Magnesium Acetate (CMA) or other chemical based dust suppressant is regularly applied by spraying using a back-pack applicator for small areas or by road sweeper to cover larger areas. CMA acts as	Typically applied to stockpiles stored outside. This is unnecessary for this operation.

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	a suppressant with the aim of reducing dust and particulate re-suspension and hence ambient concentrations.	
Heavy Water	Heavy water is used to improve the compaction and stability and reduce dust and particulates on unsealed roads or areas of land. Ideally it is blended into the road construction material as the road is constructed, but where this is not possible it can be sprayed onto the top of the road. Heavy water combines fast acting wetting agents with polymer binders, to allow penetration deep into the material and to 'agglomerate' the dust and particles together.	There are no proposals to utilise heavy water at the site. It is considered that the proposed dust suppression system will be sufficient to achieve adequate dust management.
Foam Suppression	The aggregate and mining industries frequently use foam suppression for the control of dust and particulate emissions, mixing the foam with broken material to increase efficiency. Foaming agents can be added to increase the efficiency of dust and particulate reduction. Foam	There are no proposals to utilise foam suppression at the site. It is considered that the proposed dust suppression system will be sufficient to achieve adequate dust management.

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	<p>suppression has seen increased attention in recent years and has previously been applied to waste transfer facilities where crushing of waste occurs. If using foam suppression to control dust and particulates from waste drops, the foam must be entrained within the waste material and as such must be injected prior to dropping the waste rather than at the bottom of the drop.</p>	

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Other considerations

Water usage/ availability:

Water for dust suppression will be stored in a tank on site. This will be fed with rainwater from roof, topped up using mains water.

A water bowser will also be available, tractor towed. This will be filled up at the end of each working day, in preparation for use the following day.

In the event of a drought:

In the unlikely event that there was a ban on the use of water, the operations would continue until such time as the water in the stored tank had run dry. After which time, the operator will assess the conditions and if dust is observed to be leaving the building, the operations will cease until the water supply has been re-established.

Failure of Suppression System:

If the entire dust suppression system fails, the Site Manager will arrange for repair and decide on the best course of action depending on weather conditions. If the downtime is expected to be longer than 48 hours and the weather conditions are dry², the Site Manager will have to provide interim dust suppression measures or cease operations until conditions improve, or the system has been repaired. Interim measures would include hiring mobile dust suppression units for a temporary period.

The system installed will be subject to a service agreement.

² Dry conditions refer to no precipitation (rain, drizzle, sleet, snow)

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5. Reporting and Complaints Response

The Site Manager has the overall responsibility for this procedure.

The administration staff will all be responsible for handling complaints and recording on the correct form. All complaints must be referred to the Site Manager.

In this context, a complaint may be received directly from a resident, customer or from a Regulator.

When the site receives a complaint, a record is summarised in the Site Diary. Full details will be provided on the complaints form, EMS-FR-02, see Appendix A.

All staff based in the office will be trained on recording complaints and to make sure they notify the TCM immediately.

The TCM will review the activities that may have given rise to the complaint. If necessary, the CCTV footage will be reviewed to note any specific operational issues that may have given rise to the source of the complaint. Other actions will include:

- Review site diary and establish what site activities were taking place at the time the complaint even occurred.
- Review waste types accepted that day.
- Identify whether there were any other activities in the area taking place that could have generated dust e.g. road works or construction works.
- If it is established that the emissions were attributable to activities being undertaken at the site, as necessary review the relevant operational procedures and implement improvements and provide additional training to site.
- The action taken will be reported to the Environment Agency.

The Site Manager will report the findings to the complainant and implement appropriate corrective action in accordance with a specific management plan or the Operational Procedures.

The TCM will aim to provide feedback within 48 hours of receiving the complaint.

If the site receives several substantiated complaints, the operator will engage the services of an Air Quality specialist to review the site operations and update this DEMP accordingly. Interim measures will be sought to improve conditions until a more permanent solution has been assessed and implemented. If during the interim period, complaints continue to be received, the operator will cease operations until measures have been implemented to prevent dust emissions.

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5.1 Engagement with the Community

The immediate neighbours will be contacted, and direct dial telephone details provided for the TCM and main officer number. Email contact details will also be provided. The operator has lived at the site for many years, it is a family owned/operated site, and they are part of the community.

Appendix A - Complaint Form

Customer Details	
Customer Name -	
Address -	
Postcode -	
Customer Contact Details -	
Tel -	
Email -	
Date -	
Complaint Ref Number -	
Complaint Details -	
Investigation Details	
Investigation carried out by -	
Position -	
Date & time investigation carried out -	
Weather conditions -	
Wind direction and speed -	
Investigation findings -	
Feedback given to Environment Agency and/or local authority -	
Date feedback given -	
Feedback given to public -	
Date feedback given -	
Review and Improve	
Improvements needed to prevent a reoccurrence -	
Proposed date for completion of the improvements -	
Actual date for completion -	
If different insert reason for delay -	
Does the dust management plan need to be updated -	
Date that the dust management plan was updated -	
Closure	
Site manager review date	
Site manager signature to confirm no further action required	