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Project No: 315160

Dust and Emissions Management Plan

Prepared for:

Envar Composting Ltd

Cheffins
The Heath
Woodhurst
Huntingdon
Cambridgeshire
PE28 3BS

Contents Amendment Record

This report has been issued and amended as follows:

Revision	Description	Date	Author	Reviewer	Approver
0.1	Draft for internal review	22/10/2024	GK		
1.0	Final version for submission	25/10/2024	GK	RH	RH

Executive Summary

The site activities have the potential for dust and particulate emissions to be generated without abatement controls. Management practices, equipment and infrastructure are in place to ensure emissions of dust and particulates are minimised and contained as far as possible.

This Dust and Emissions Management Plan (DEMP) explains the site setting and risks from dust and particulate emissions and how these will be controlled for the lifetime of the activity. The document follows EA guidance[1] and has been structured using the EA template for a DEMP (available upon request).

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In accordance with the guidance, this DEMP has considered emissions of dust and particulates, including bioaerosols, mud and litter. Where EA templates have been used to structure the report, any sections that are not applicable to the activity have been included for completeness. With an explanation of why they are not relevant.

The purpose of the DEMP is to explain how the operator will prevent, contain, and supress any dust and airborne particulate emissions arising from the activity. Including from:

- handling of waste – for storage and placement in deposit;
- vehicle emissions; and
- visible emissions from associated site activities e.g. vehicle movements and condition of site surfaces.

This DEMP forms part of the overall documentation package detailing environmental management of the site. This package includes other documents such as:

- An overarching site risk assessment.
- An Odour Management Plan (OMP).
- A Fire Prevention Plan (FPP).
- A Site Condition Report (SCR).

The basic objective of the DEMP is to ensure that no dust or particulate emissions occur outside the Permit boundary and the chemical properties of any dust impacting potential receptors is not considered.

[1] Control and monitor emissions for your environmental permit - GOV.UK

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Section 1.0: Introduction

1.1 Site details

1.1.1 Site name

Envar Composting Facility

1.1.2 Site address

The Heath

Woodhurst

Huntingdon

Cambridgeshire

1.1.3 Operator name

Envar Composting Ltd

1.1.4 Permit number

EPR/GP3930DF/V005

1.2 Site activities

The following site waste activities are conducted:

- In Vessel Composting (IVC) accepting up to 135,000 t/yr of mixed green and food waste inputs. This involves sorting of incoming Cat 3 material, then shredding and sanitising through the IVC tunnels. Once through the tunnels, the material is then placed on the outdoor stabilising pad, formed into windrows, turning these, principally using the bespoke windrow turner, and finally screening to produce compost.
- Grade A wood waste and or virgin wood is delivered to the biomass area. It is processed and dried to produce a specific certified biomass fuel. Remaining wood is sent off to appropriate biomass plants.
- The waste transfer operation is now run by Envar's sister company Countrystyle Recycling Ltd (CRL), but under Envar's control and within the terms of Envar's permit. Up to 20,000 tonnes per annum of commercial and industrial waste streams including, general waste, DMR, ferrous and non-ferrous metal, inert material, glass, green waste and wood waste is collected on CRL's dustcarts, RoRo and skip vehicles operating from the site. These waste streams are tipped in the Transfer Building, sorted then pushed up or stored in bunkers and containers located inside the building. All material is then bulked out regularly via CRL operated bulk haulage resources for onward recycling and/or recovery.

Other activities on site are associated with the general running of the main activities. These include

- Workshop activities including fitting, welding, fabrication cutting and cleaning.
- Office activities including management and administration.
- Welfare activities comprising of:
    - Management office.
    - Bungalow driver welfare.
    - Heathtops House staff welfare.

- 3 x sleeping accommodation for security personnel and tramping staff members (HGV Drivers who are staying out, or staff members who spend the week on site and go home at weekends).

- Support functions such as labs, car parking, server rooms and technical offices.

The site covers a large area, but the reception, preparation and primary composting processes are all enclosed within buildings and negatively ventilated with discharge through a water-based-scrubber and biofilter system. The Vessels are large bunker style enclosures with a one-way flow process; material is received from the enclosed reception and preparation areas through a door at one end and once sanitised, is removed from the vessel via the door at the other end. The Vessels have ventilated floors and work on a recirculatory ventilation design that includes sophisticated temperature moisture and oxygen control.

The site is located in the local area authority of Huntingdonshire District Council.

The site is located in an Air Quality Management Area (AQMA) for NO_x (as NO_2). This is shown in the following plan (AQMAs shaded in blue; site location given by a red dot):

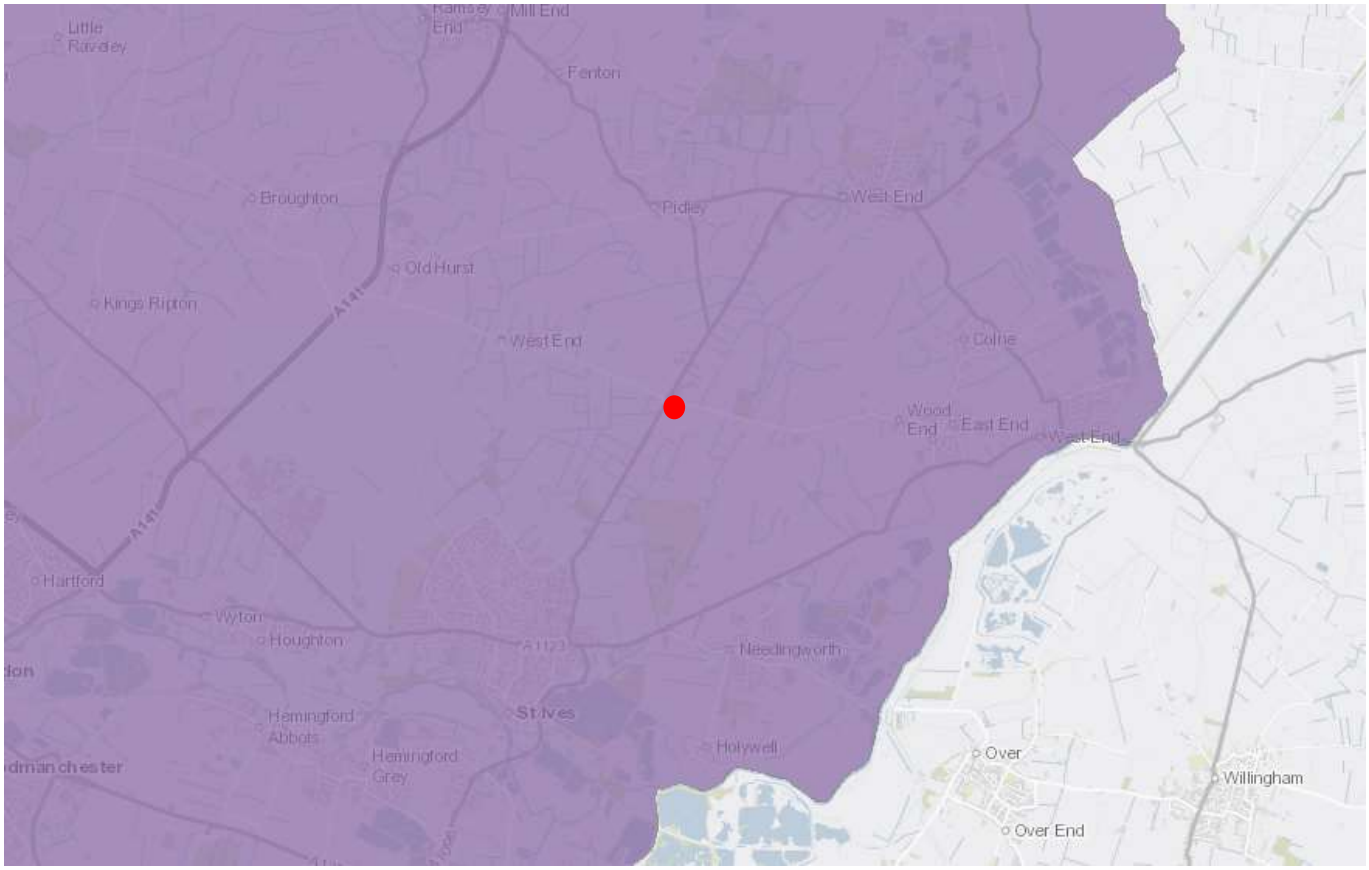

Figure 1-1: Air Quality Management Area (AQMA) for NO_x as NO_2.

Given the nature of waste stored at the site, without any abatement controls the site has the potential for dust and/or other emissions to be generated. Hence the requirement for this DEMP.

This document forms part of the requirements of the site's bespoke environmental permit. The purpose of this document is to:

- Investigate sources of dust, dust pathways and potentially sensitive dust receptors for and around the site, to determine how to eliminate dust-based environmental issues stemming from the operation of the site.
- Provide operational staff onsite with the information required to control dust and emissions from the site.

The map below, sourced from https://magic.defra.gov.uk/, shows some nearby receptors for the site. On this map:

- The site centre is indicated by a red square.
- A 1,000 m radius from the site is indicated by a red line.
- The following key provides a guide to the various areas of potential interest within approximately 1,000 m of the site:

Map Indication	Key
	Priority Habitat Inventory - Traditional Orchards (England)
	Priority Habitat Inventory - Deciduous Woodland (England)
	Sites of Special Scientific Interest (SSSI)

Figure 1-2: Sensitive receptors within 1,000m

Contrasting many other atmospheric pollutants, the generation of dust is principally conditional upon the prevailing weather conditions. Clearly the most significant meteorological factor is the predominant wind direction and wind speeds, and consequently data has been collected regarding the predominant wind speeds and directions appropriate to the site. This wind rose[2] indicates that prevailing winds are generally

[2] Simulated historical climate & weather data for Cambridge - meteoblue

from the west to southwest in the area. This means that special consideration should be given to receptors located to the east to the northeast of the site.

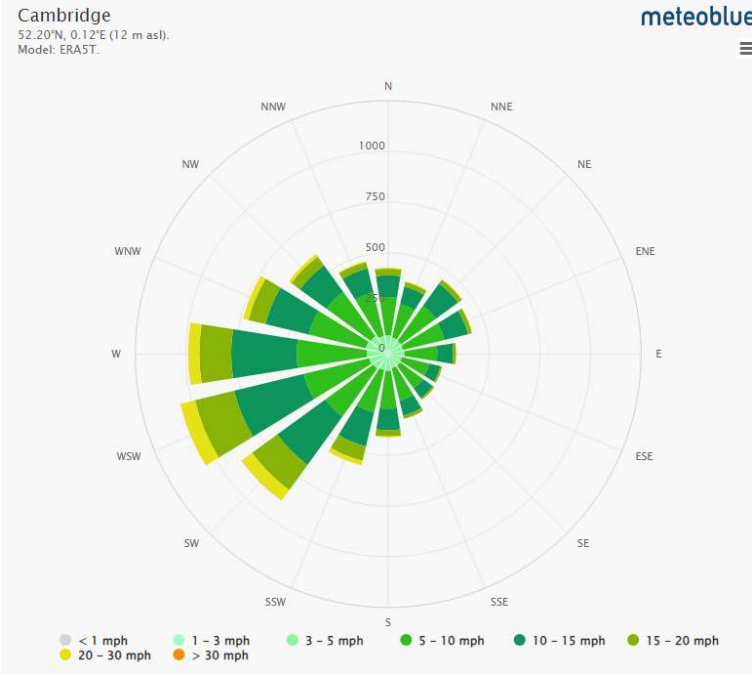

Figure 1-3: Wind rose for Cambridge

1.3 Sensitive receptors

Based on information, the following sensitive receptors of interest have been identified for the site.

Table 1-1: Nearest sensitive receptors

Direction	Closest property	Approximate distance to the site boundary (m)
North	The Raptor Foundation	425
Northeast	Mushroom Farm (redundant)	450

The Woodhurst site is fairly remote from housing but in relatively close proximity to local roads. The nearest residential properties are some distance away and are unlikely to be affected by onsite operations. Figure 1-2 identifies the nearby sensitive receptors. This shows that the nearest sensitive receptors are either upwind, or else, in the case of the Raptor Centre to the NNW, is in excess of 200m distant from the external composting pad and the semi-enclosed compost screening process.

Long-term impacts from dust are not likely although short term events have the potential to occur, for example, in exceptional weather conditions. The quantity and dispersion of dust emissions will vary depending on weather conditions and the effectiveness of suppression measures.

Note that there are no schools, aged care facilities, healthcare facilities, or other similar receptors located within 1,000 m of the site.

Table 1-2: Other potential sources of dust in the area surrounding the site.

Company	Address	Type of Business	Distance from site boundary (m)
Various	-	Agricultural	>50

This indicates that there are no other significant sources of dust in the area.

1.3.1 Other receptors

- The two houses at the site; one nearest the cross roads and one along the Bluntisham Heath Road are part of the Composting Site Property and are not used as dwellings.
- The next nearest dwellings or workplaces are the two farms: one to the south 'Hill Farm' on the main road, and one to the east 'Bridge Farm'. These are both around 500m distance from the site.
- The roads that pass by the site; the B1040 (north/south) and the Bluntisham Heath Road are both quite busy with traffic, sometimes there are short queues of traffic waiting to join the main road or turn at the crossroads. There is a speed restriction together with speed cameras on the B1040 outside the site main gates. However, these are not regarded as sensitive receptors as the duration of any exposure is likely to be less than a minute or so and is well below the 6 hours exposure period.
- The B1040 includes a footpath, as does the Bluntisham Road and the field to the west of the site where the path follows a double bend along the field boundary. Taking the longest length of footpath across the fields from the west, along the B1040 and then along Bluntisham Road may comprise a distance of 1200metres. At a slow walking speed of 5km/hr this would entail a walk time of approximately 15 mins duration to complete the route.
- The fields surrounding the site are in agricultural production, typically arable crops. For these it is expected that a tractor driver (or similar machine) may be within the advised 250m proximity while traversing the field undertaking an agricultural activity, such as cultivations, or harvesting. These are not regarded as sensitive receptors as the duration of any exposure is likely to be only a minute or so and is well below the 6 hours exposure period.
- Similarly, for the Orchard to the south of Bluntisham Road, which is not in intensive production and labourers or workers may only be present for very short periods at specific times of the year.

Section 2.0: Site Operations

2.1 Waste deliveries to the site

Deliveries are made to the site solely by road. The vehicles used to deliver the various waste streams to the site are generally 29-tonne articulated lorries, 8-wheekers and/or refuse vehicles, with an emissions rating of Euro 5/Euro 6 where applicable. The waste in the vehicles is covered during transit until unloading at the site. Records are kept for each load received at the site, including the relevant European Waste Catalogue (EWC) code, description etc.

2.2 Overview of waste processing, dust and other emission controls

2.2.1 Delivery and unloading

All waste is delivered to the site in covered LGVs through the existing site entrances. Loads of waste are then tipped into the relevant area for storage prior to processing activities being performed. Load tipping occurs at minimum height to reduce dust emissions during unloading.

2.3 Storage

Waste is stored in storage bays/areas as described below in table 2-1.

2.4 Loading and despatch

Waste is loaded onto lorries/trailers for despatch from site or to another area on the site.

Table 2-1: Materials and storage details

Plan ref	Waste	Area	Method	Max length (m)	Max width (m)	Max height (m)	Volume (m^3)	Max storage time
1	Cat 3 ABPR and green waste	Reception area #1	Concrete bays	20	12.5	3	750	7-days
2	Cat 3 ABPR and green waste	IVC tunnels	IVC tunnels (330t and 600t)	37	6.5	3.1	745.55	Actively managed usually less than 10 days
3	Oversize	Oversize piles	Stored on pad	12	12	3	432	7-days
4	Plastic (removed from process)	RDF bay	Baled in RDF bay	13	17	1.8	397.8	4-weeks
6	Green waste	Green waste pad	Stored on biomass area	12	12	3	432	7-days
7	Biomass product	Biomass	Stored on biomass area	12	12	3	432	7-14 days
8	Wood chip	Treatment/transfer building	Stored in the transfer and treatment area	12	12	3	432	7-14 days

			Or dried material bays					
8	General waste	Treatment/transfer building	General waste bays (x2)	6.4	6.4	3	123	14 days
8	DMR	Treatment/transfer building	General waste bays (x2)	6.4	6.4	3	123	14 days
8	Ferrous/non-ferrous metals	Treatment/transfer building	Stored in Ro/Ro container	6.2	2.45	2.4	30.6	4-months
8	Green waste	Treatment/transfer building	Stored in a skip	2.3	1.5	1.1	3.8	2-days
8	Wood waste	Treatment/transfer building	Stored in a skip	2.3	1.5	1.1	3.8	2-days

2.4.1 Additional measures

The following further points relate to dust emissions control:

- Deliveries will be undertaken only between the hours of 06:30 and 18:30 from Monday to Sunday, except public and bank holidays (this is in line with the site's planning restrictions).
- In order to maintain capacity within the designated areas/bays, regular shipment of material/product off-site is undertaken.
- The site operates in accordance with an Environmental Permit regulated by the EA. The permit includes a requirement for use of dust minimisation throughout the operational life of the plant.
- The movement of vehicles on Site has the potential to cause dust emissions, particularly in dry and windy conditions. A 5mph speed limit and the minimisation of vehicle movements will be enforced on the Site to help reduce the amount of dust generated by vehicle wheels.
- All vehicles entering the Site will be visually inspected prior to unloading to ensure that excessively dusty loads are not accepted.
- Excessively dusty loads will be rejected from the Site in accordance with the Waste Rejection Procedure in the EMS.
- All incoming and departing loads are sheeted.

2.5 Mobile plant and equipment

Nitrogen Dioxide (NO_2) gas and Particulate Matter (PM_{10}) are common pollutants released by diesel-fuelled internal combustion engines and the site uses several items of plant with internal combustion engines. The following table lists the type, mobile and emission ratings for the mobile plant and equipment used on site:

Table 2-2: Site equipment

Description	Make	Model	Emission rating
Screener (Static)	Kiverco	1030	tbc
Screener (Static)	Kiverco	830	tbc
Loading shovel	JCB	457	tbc
Loading shovel	JCB	437	tbc
Loading shovel	JCB	457Z	tbc
Loading shovel	JCB	437	tbc
Loading shovel	JCB	437	tbc
Loading shovel	Komatsu	Wa457-10e0	tbc
360º Excavator	Komatsu	PC210	Stage V
Tractor	Case	MXM190	tbc
Dumper truck (x2)	Volvo	A30G	Stage V
Telehandler	JCB	535-95	Stage V
Road sweeper	tbc		tbc

All machines are operated on a leased/owned. basis and are serviced on a regular basis by manufacturer supported dealerships as required by the manufacturer. Failure to adhere to the recommended service intervals invalidates the manufacturer 5-year warranty.

Current equipment complies with the ‘interim tier 4’ emissions standard as a minimum.

When due for replacement, machines are replaced by equipment that has the lowest emission standard possible at the time of the contractual arrangement.

Fuel use is monitored to reduce costs. All machines are switched off when not in use and are not left idling for long periods of time, which will also help to reduce pollutant emissions.

Section 3.0: Dust and Particulate (PM_{10}) Management

3.1 Responsibility for implementation of the DEMP

The Compliance Manager (CM) at Envar Composting is responsible for the DEMP and to ensure that it is used. The Site Manager (SM) is the deputy in this case as they are perfectly positioned with their attendance at the site to continually monitor and enforce the DEMP requirements.

It is envisaged that the DEMP will be reviewed on a bi-annual basis as a minimum. However, should this frequency be inadequate it will be reviewed annually. Due to the nature and location of the operation, along with the control measures in place, it is not thought that this frequency will need to be reduced further. Operational experience further confirms that the process can continue without receiving complaints.

The CM is competent to implement and review the DEMP due to their experience in Implementing other Quality Management Systems.

Operational staff training is delivered via toolbox talks and there is a direct line of contact between operatives and the CM. Should any issues arise, the CM has a direct line of communication to the Board.

3.2 Sources and control of fugitive dust/particulate emissions

Measures to control emissions have been considered in the context of the operational setting and the operations that are undertaken. Identified operations have the potential to produce and release particulates at the site are described below;

1. Vehicles entering/leaving site with mud on wheels;
2. Vehicles and plant moving around the site kicking up dust;
3. Material falling from vehicles;
4. Discharging of waste materials;
5. Site surfaces;
6. Loading materials;
7. Particulate emissions from the exhaust of vehicles/plant/machinery on site;
8. Material crushing/shredding;
9. Material screening/turning;
10. Stockpiling materials; and
11. Wind-whip from stockpiles.

The pathway for most of the releases is atmospheric dispersion; either primary, from the dust/particulate source (e.g., crushing and/or screening of materials) or secondary, where dust is stirred up by vehicle movements.

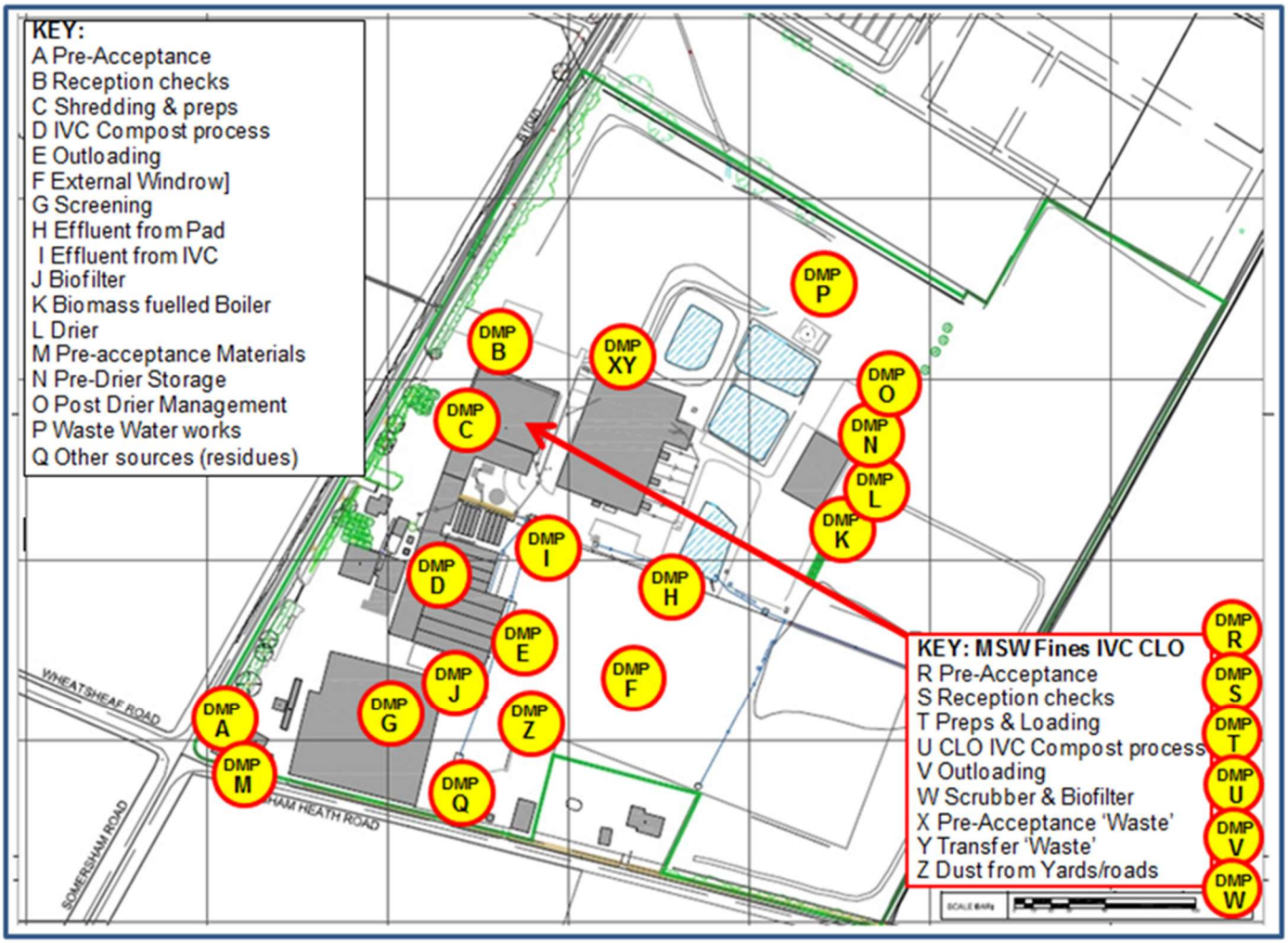

Figure 3-1: Location of dust emission sources

Table 3-1: Source-Pathway-Receptor routes

Source	Pathway	Receptor	Impact	Control
Pre-acceptance (biowaste)	Dusty type materials accepted	Local residents/businesses Local environment.	Visual soiling, also consequent resuspension as airborne particulates. Smothering of vegetation.	Pre-acceptance criteria with attention to dust and ability to decline or reject dust or fibre particulate type wastes.
Bio-waste acceptance and reception.	Dry potentially dusty material within the green waste.	Local residents/businesses Local environment.	Airborne particles	Offload inside enclosed building suction extraction to scrubber and biofilter. Feedstock damped down.
Vehicles entering or leaving site with debris on wheels	Tracking dust on vehicle tyres	Local residents/businesses Local environment.	Visual soiling, also consequent resuspension as airborne particulates. Smothering of vegetation.	Vehicles unlikely to have come in to contact with mud prior to accessing the site. Road sweeper employed to ensure no debris is deposited on the public highway.
Vehicles and plant moving around the site kicking up dust	Atmospheric dispersion	Local residents/businesses Local environment.	Airborne particles	5mph site speed limit at all times. Road sweeper employed to remove any surface dust. Road can be wetted if required.
Material falling from vehicles	Material falling from vehicle bodies	Local residents/businesses Local environment.	Visual soiling, also consequent resuspension as airborne particulates. Smothering of vegetation.	Sides/lips of tipping bodies swept before departure to remove any accumulated materials.
Discharging of waste materials	Atmospheric dispersion	Local residents/businesses Local environment.	Airborne particles	Accepted waste materials are generally not inherently dusty due to moisture content. Should a dusty load be accepted that has the potential to elevate particulate emissions, the tipper will be re-orientated to reduce the

				potential for dust emissions, or discharged within the building.
Site surfaces	Contamination of trafficked areas.	Local residents/businesses Local environment.	Visual soiling, also consequent resuspension as airborne particulates. Smothering of vegetation.	Site surfaces that are used by traffic will be regularly cleaned along with the measures described above.
Loading materials	Atmospheric dispersion	Local residents/businesses Local environment.	Airborne particles	The finer processed materials have a limited potential to generate airborne particles during loading. Shovel buckets will be kept as low as possible to the ground to reduce spillage. Loading shovel dump heights will be kept as low as possible. Material will be tipped in to trailers in a controlled manner to reduce the potential for particulates to be propelled from the trailer.
Windrow management	Warm compost, loss of moisture and continues to dry the compost that could make it more friable and mean greater potential for dust release.			Relies on composting process being kept moist in process; and material conditioned by mixing the water into the profile. External process requires compost to be moist in range 40-60% moisture. The windrow turner provides water spray wetting of the compost as it turns the material from the 'bottom up' meaning that aeration is introduced by a tumbling action without the material being thrown into the air

Particulate emissions from machinery exhausts	Atmospheric dispersion	Local residents/businesses Local environment.	Airborne particles	Anti-idling campaign in place. Low emission plant always used.
Material crushing	Atmospheric dispersion	Local residents/businesses Local environment.	Airborne particles	Crusher fitted with dust suppression equipment.
Material shredding	Shredding may release dusty materials.	Local residents/businesses Local environment.	Airborne particles	Shredding inside enclosed building suction extraction to scrubber and biofilter. Feedstock damped down. The waste transfer building is also provided with an air extraction system. This is based on LEV so that for any given process the air is locally extracted, and this has the secondary benefit of generating air changes in the building.
Material screening	Transfer to/use of screener system on drier friable material releases dust.	Local residents/businesses Local environment.	Airborne particles	Screening process is semi enclosed, dry material that may have higher dust potential. Use of enclosures to static screening equipment. Use of spray misting/spray dust-suppression system. Use of water spray damping down of road surfaces and use of the Road Sweeper to remove debris and dust. The waste transfer building is also provided with an air extraction system. This is based on LEV so that for any given process the air is

				locally extracted, and this has the secondary benefit of generating air changes in the building.
IVC composting	Composting loss of moisture vapour with drying of material.	Local residents/businesses Local environment.		Gicom System provides for water irrigation. Moisture content is in the range of 40-60%. Use of moisture control system, air extraction, scrubber and biofilter.
Stockpiling materials	Atmospheric dispersion	Local residents/businesses Local environment.	Airborne particles	The finer processed materials have a limited potential to generate airborne particles during loading. Loading shovel dump heights will be kept as low as possible. Material will be tipped on to stockpiles in a controlled manner to reduce the potential for particulates to be propelled from the trailer. Shovel buckets will be kept as low as possible to the ground to reduce spillage.
Wind-whip from stockpiles	Atmospheric dispersion	Local residents/businesses Local environment.	Airborne particles	Dust risk is mitigated by thorough conditioning of the material; and damping down Stockpiles may be capped if necessary.
CLO IVC exhaust air management	Exhaust from composting may contain dust.			Exhaust gas control system with twin stages of air cooling/ scrubbing and biofiltration.

Table 3-2: Measures that will be used to control dust/particulates (PM) and other emissions

Abatement measure	Description/effect	Overall consideration and implementation	Trigger for implementation
Preventative measures			
Site layout in relation to receptors	Activities that emit dust particles are located within totally, or at least partially enclosed, atmospheres. Where those activities are carried where it Is not possible to enclose them, dust generation is managed by moisture control of the feedstock. The site is located at the maximum potential distance from down-wind receptors without impacting any upwind receptors.	Dust control has been considered by the operator through good process and site design, as well as identification of good housekeeping procedures. The control methods to be employed at the proposed mineral extraction site are based on: • Good operating and management practices to avoid emissions arising from activities; • Good process design to minimise emissions; • Abatement or control to reduce dust emissions; and, • Disrupting the emission pathway to sensitive receptors.	Wind strength and/or direction cannot be relied upon as a preventative measure. As such, all processing equipment is fitted with dust suppression equipment to prevent emissions. There are Standard Operating Procedures (SOP) and training of staff with respect to correct operation of the equipment. This lessens the likelihood of dust from the operations causing a nuisance to others. However, the objective is to reduce dust at source and not to let dust leave the site boundary.

Site speed limit, 'no idling' policy and minimisation of vehicle movements on site.	Reducing vehicle movements and idling will reduce emissions from vehicles. Procurement policy to only purchase clean burn road vehicles and non-road going mobile machinery. Enforcement of the 5mph speed limit will limit re-suspension of particulates by vehicle wheels.	Straightforward to implement as part of good practice. Measures are identified clearly in the site management system. 5mph speed limit is identified clearly in the site management system and on site and implemented as appropriate measures	If significant volumes of dust are noted during routine visual monitoring the following actions will be taken: ▪ Observations undertaken to ensure that vehicles are obeying speed limits; and, ▪ Additional road sweeping.
Minimising drop heights for waste.	Minimising the height at which waste is handled will reduce the distance over which debris, dust and particulates could be blown and dispersed by winds.	Measure will be in place at the commencement of operations and will form a part of toolbox talks. These steps are identified clearly in the site management system and implemented as appropriate measures.	Control measure will always be in place during site operations and will form a part of toolbox talks on an ongoing basis.
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.	The Site Manager will monitor weather forecasts and ensure the necessary on-site precautionary measures are in place to prevent emissions. All personnel employed on site will undertake visual monitoring for dust throughout the working day. Any observed problems will be reported to the Site Manager who will investigate the cause and implement any necessary remedial action.	If significant volumes of dust are noted during routine visual monitoring the following action will be taken: • All dust suppression equipment is operating correctly • Action taken to ensure that vehicles are obeying speed limits; and, • Additional road sweeping.

On-site sweeper	The road surfaces and work areas are wetted by irrigation and then swept using the road-sweeper so that the material is vacuum suction removed into the sweeper vehicle body.	Sweeper has water spray system, brushes and vacuum suction removal of dust from roadways.	The approach is to maintain a high standard of cleanliness on roadways used by haulage vehicles etc. and to clear debris from the operational areas of the pad so that the material does not become ground down into dust.
Easy to clean impermeable concrete surfaces.	Creating an easy to clean impermeable surface, using materials such as concrete as opposed to unmade (rocky or muddy) ground within the site. This reduces the amount of dust and particulate generated at ground level by vehicles and site activities. Enforcement of the 5mph speed limit will limit re-suspension of particulates by vehicle wheels.	Provision of an impermeable surface throughout the entire site; ▪ All active site roads will have an imposed speed limit of 5mph; ▪ Main access roads to be swept with a mechanical road sweeper as and when conditions dictate.	Waste treatment areas will have an impermeable surface so any water can be captured and either used within the washing process or for dust suppression. Roadways in normal use and any other area where there is regular movement of vehicles have a consolidated surface capable of being cleaned. They are kept clean to prevent or minimise dust emissions and kept in good repair.
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.	This abatement measure is not likely to have a significant impact on dust emission levels.	High volume machines ensure that this is processed as swiftly as possible.
Reduction in operations (waste throughput, vehicle	Reducing the amount of activity on site, including no windrow turning, external crushing, or screening of high-risk materials during windy weather as well as associated traffic movements should result in reduced	The site has procedures in place to reduce activity on site if required through complaints or known issues, or adverse weather conditions.	All turning, crushing and screening equipment is fitted with suppression equipment to reduce dust emission potential.

size, operational hours).	emissions and re-suspension of dust and particulates from site.	This includes a weather station to monitor windy weather to modify working procedures if required.	
Remedial measures			
On-site sweeping	Sweeping could be effective in managing larger debris, dust and particulates but may also cause the mobilisation of smaller particles. Minimisation of dust on roadways by wetting down and removal of dust/debris by loading shovel and by sweeper. This may generate dust and particulate movement that may become a Health and Safety issue if the filters and spray bars on the sweepers are not maintained.	Easy to apply but less effective than other measures. Covered in the management system procedures and implemented thoroughly. Operation covered by regular toolbox talks along with the triggers for operation of the sweeper. Sweeper maintained to ensure that its operation is effective. Manufacturer maintenance schedules are adhered to detailing when consumable items on road sweepers are replaced (Filters, brushes etc).	Roadways in normal use and any other area where there is regular movement of vehicles have a surface capable of being cleaned. They are kept clean to prevent or minimise dust emissions and are kept in good repair.
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.	Can be water intensive.	During hot, dry and windy conditions stockpiles will be sprayed with water. Stockpiles may be capped if necessary.
Water suppression with mist sprays.	Installation of mist sprays 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.	Very effective at controlling point source emissions of dust and particulates. Can be installed to conveyors and areas where waste is dropped. 'Halo' rings can be fitted to	During hot, dry and windy conditions stockpiles will be sprayed with water. Stockpiles may be capped if necessary.

		conveyor drops on concrete crushers and screeners to minimise dispersion.	
Water suppression with bowser.	Using bowsers is a quick method of damping down large areas of the site with large water jets. This method could also be used on easy-to-clean, impermeable concrete surfaces.	Highly water intensive and more likely to minimise dust and particulates on the ground that is at risk of being re-suspended rather than already airborne dust and particulates. Very effective at dampening down roads and large surface areas. Can also come with hose attachments and other attachments to increase its versatility.	Can be used as a fall-back measure should all other measures not prevent dust emissions.

Training of operatives and systems of work in place, in particular the damping down of windrows, suppression of dust in the screening building and the use of the road sweeper to keep roadways and paved areas clean and clear of dust. These aspects of management are regularly checked and especially in warm dry weather when there is the need for extra vigilance and increased levels of management.

Section 4.0: Particulate Matter (PM) Monitoring

The site is located within a rural area in relatively open countryside at least 250m from the nearest sensitive receptor.

Should particulate matter monitoring be required, this will be discussed with the relevant specialist to establish the most suitable and effective method.

There are activities on-site that may create dust which could possibly drift off-site and cause an amenity nuisance. Such activities include:

- Vehicle input of wastes (vehicles may kick up dust during dry weather).
- The unloading and external treatment of certain waste materials.
- External crushing/screening operations of inert wastes.

Site staff supervising individual waste handling operations will, during the undertaking of those operations, undertake visual monitoring of aerial emissions. Where visible aerial emissions are detected, either dust plumes or areas affected by the fallout of dust, that are likely to be transported beyond the site boundary, action will be taken immediately to stop/reduce the rising of the dust.

The incident and the remedial action shall be recorded in the site diary.

4.1 Monitoring location

The site is located at least 250m from the nearest sensitive receptor.

There are no set monitoring locations, other than a prescribed route (as the wind direction is most commonly from the southwest to the northeast, the monitoring route will be to the northeast of the site), around the site perimeter as the weather conditions and operations change, so that a fixed location may not always be representative.

Before the staff member responsible for monitoring commences the route, they will observe the wind direction at the time and use it to inform the monitoring route taken.

It is not considered effective to stipulate a precise time for the routine monitoring to take place, it is far more appropriate for the routine dust monitoring to be a ‘task’ based inspection so that the dust impacts can be properly monitored as opposed to an arbitrary time when the operation with the most potential for dust generation may not be taking place.

As such, dust monitoring, based on visual assessment, would take place during turning operations during periods of high wind strength.

Should particulate matter monitoring be required, potential monitoring locations will be discussed with the relevant specialist to establish the most suitable and effective position. It is assumed that the location would usually be to the northeast of the site.

4.2 Operation of the PM monitoring equipment

The likelihood of dust emissions is considered insignificant given control, measures in place. However, it is acknowledged that should dust emissions be identified as an issue at the site and/or complaints are received as a result, the operator will review the mitigation measures and monitoring techniques detailed in this DEMP to improve detection and prevent emissions being discharged from the site proactively. The site diary and records of the visual inspections are reviewed by company senior management with the intention of identifying any trends in dust emissions and improving processes on site.

4.3 Quality assurance/Quality control and record keeping

The results of daily inspections and any remedial work will be recorded in the Site Diary as a minimum. Should any monitoring be carried out, the following will be recorded:

- The make and model of the monitoring equipment;
- The serial number of the monitoring equipment;
- When, how and by whom the data is checked;
- When the equipment is calibrated;
- How the equipment is calibrated;
- Copies of the qualifications and training records of who carries out the calibration;
- When and by whom the equipment is routinely inspected; and
- If the equipment is damaged and/or no longer able to collect reliable data.

4.4 Equipment and data management

Where dust emissions are identified as an issue at the site and complaints are received as a result, the operator will review the monitoring techniques detailed in this DEMP to improve detection and ensure that any emissions data is representative and enables measures to be undertaken to reduce emissions from being discharged from the site.

4.5 Additional detailed monthly reporting

Where dust emissions are continually identified as an issue at the site and complaints are received as a result, the operator will consider carrying out a more detailed investigation in order to work out the source of the pollution, whether it be from dust/particulate sources on site, sources of dust/particulates beyond the site boundary, background sources affecting the whole region, or more local sources.

4.6 Dust monitoring plan

All plant is inspected daily regularly and cleaned down after use to prevent the build-up of dust on machinery parts and hot exhausts.

Informal dust monitoring comprising of operational staff remaining vigilant for visual dust and particulate emissions will be carried out by operational staff members during the turning and external crushing and screening processes. Where dust emissions are identified during the treatment process, operations will pause, and the site boundary will be checked to ensure emissions are not leaving the site. Where dust

emissions are seen to be leaving the site boundary material will be dampened down before the treatment process resumes.

No dust monitoring will be carried out outside operational hours, stockpile management and distance to receptors will afford screening for any unprocessed and processed stockpiles. Where regular complaints are being received outside of operational hours over a period of two weeks or more, these will be investigated, and dust mitigation measures will be reviewed with the potential for stockpiles to be dampened down prior to the end of shift.

All dust monitoring results will be recorded and retained in the site office along with dates, times, weather conditions, wind direction and the name of the individual carrying out the monitoring event. Records will also be kept in accordance with the site Environmental Management System (EMS).

Section 5.0: Actions When Alarm is Triggered

The following actions are taken when an alarm is triggered:

1. The Site Manager (SM) assesses the activities underway and/or the nature of the waste materials being delivered immediately prior to the complaint being received, to work out what has caused the complaint.

2. If the source cannot be established confidently the likely dust/particulate generating activities will be suspended, i.e., crushing, screening.

3. Where the source originates from the site the SM will take appropriate action in terms of dust/particulate abatement, to ensure that the complaint is followed through. This may take the form of the following;

a) Investigating the source of the dust/particulates to prevent a re-occurrence.

b) Suspending operations which are not being conducted using best-practice controls.

c) Additional use of the dust abatement measures.

d) Logging findings of a – c in the site diary, and in the reporting template within the relevant appendix of the Environmental Permit.

In all cases, any new lessons learnt from the investigations are considered by company management and implemented into the dust & particulate emission management plan (if not already included), to prevent a re-occurrence of the complaint.

The complaint is not the sole indicator of a dust event at the site; the continuous visual monitoring of potential dust sources and activities safeguard play a vital part in managing dust and particulates.

Appropriate action will be taken which will include the cessation of the activity if necessary. In the case of a complaint action taken will be communicated to the complainant. The nature of the complaint, the findings of the investigation and the action taken will be recorded. Consideration will be given to the wind speed and direction, the site operations and observations.

Table 5-1: Actions to be taken when a trigger is breached

Potential emission source	Risk	Typical actions to reduce emissions	Trigger for contingency measure	Specific contingency measure (Backstop)	Monitoring trigger that will indicate a return to normal operations
Dusty feedstock received at the processing site.	Pulverised waste accepted at the site produces excessive dust.	Promptly mix with a high moisture content feedstock.	Dust detected at the point of discharge. (Dust detected at boundary)	Increase wetting measures. (Remove from site)	Dust not detected at site boundary.
Stockpiled unprocessed feedstock becomes too dry in hot weather.	Waste stockpiles are held for excessive periods of time without processing taking place.	Stockpiles on site are processed quickly. Material deposited first is processed first. Any waste generating excess dust will be given processing priority.	Long periods of hot, dry weather reducing the moisture content of the material.	Ensure all material is processed as soon as possible and placed in stockpiles. (Remove from site)	Dust not detected at site boundary.
Crushing and screening of materials.	Waste materials are crushed or screened when the wind direction is towards areas accessed, or inhabited, by sensitive receptors.	Crushing and screening of dusty materials during windy conditions, or when wind is blowing towards sensitive receptors, is reduced to a minimum.	Weather forecast is used to ascertain the effect of the wind speed/direction on the operation. (Dust detected at boundary)	Operations that may release excessive dust are programmed to take place only during favourable weather conditions. Careful monitoring of the conditions will ensure that the 'window' for processing is	Dust not detected at site boundary.

				broad enough to allow flexibility to wait for suitable weather conditions. (Cease processing and remove if excessively dusty)	
Facility maintenance/ equipment cleaning.	Accumulations of waste material are allowed to degrade and become dry and produce dust.	Regular clean downs of machinery will prevent dust from accumulating. Areas will be swept when empty to prevent dust blowing.	When a stockpile is planned for removal, the area will be swept/tidied as the pile is reduced/removed.	Once a stockpile has been moved, it's footprint will be scraped with the loader bucket to prevent a build – up of material.	Dust not detected at site boundary.
LGVs leaving site.	Spilt accumulations of material are allowed to dry out become desiccated and produce emissions.	Brushing down of trailer sides and sheets in place before leaving will prevent material dropping from trailers and prevent dust being generated.	Long periods of hot, dry weather reducing the moisture content of the material.	All vehicles are checked after the wheel wash and prevented from leaving site if not sheeted or clean.	Dust not detected at site boundary.

Section 6.0: Reporting and Complaints Response

6.1 Engagement with the community

Where a complaint is raised, the site will respond to the complainant once an investigation has been completed. This will include details as to the source of the complaint and the measures taken to correct it. Where the source did not originate from the site, the complainant will be informed as such and will be given an explanation as to how this conclusion was determined.
Depending on the time the complaint was received the site will respond within 2 working days.

Being a good neighbour is important to Envar Composting Ltd and is very beneficial to their business. Should the site cause an impact on local residents/businesses they will be kept abreast of what the operator is doing to deal with any issues.

6.2 Reporting of complaints

In order to ensure that members of the public are easily able to report any complaints relating to dust emissions from the site, there is a display board at the site entrance which details the site name, permit number, the Environment Agency (EA) and Envar contact details. By providing contact details for the EA as well as the operator, this ensures that the member of public can report their complaint and be confident that it would be received by the appropriate party even if they feel uncomfortable discussing directly with the operator.

6.3 Management responsibilities

The Site Manager is responsible for the implementation of this Dust and Emissions Management Plan. All site staff receive instructions on how the plan is implemented during toolbox talks on site.

6.4 Summary

Processing emissions are controlled by using practical site management controls including careful movement by experienced operators, containment/screening to shelter other processing operations, limiting location of certain processing operations, operation of best practise in terms of housekeeping operations, and if necessary, with cessation of operations in certain weather conditions if dust blows beyond the site boundaries.

Successful site management ensures the control of air-borne emissions by including the following measures;

- Regular assessment of prevailing weather conditions and site operations,
- Use of sprays on processing equipment,
- Sheeting of all loads immediately after vehicle loading,
- Keeping hard surfaces damp in hot, dry, windy weather using a water bowser,
- Regular maintenance of all plant including water sprays, hoods and screens,
- Keeping vehicles clean and dust free and site surfaces free from dust/material,
- Limiting the speed of vehicles at all times,

- Careful moving of material,
- Postponing operations if significant wind-blown dust is likely to result; and,
- Ceasing operations if significant wind-blown dust is caused.

Ongoing monitoring of dust levels and review of the operation of the DEMP, with appropriate up- dating, will ensure continuing effective dust management at the site preventing adverse dust impacts off site.

This DEMP will be formally reviewed by Envar Composting Ltd., initially six months after issue of the varied permit, and from then on, on a bi-annual basis as a minimum to ensure that the controls described are effective and reflect best available techniques. In addition, the DEMP will be reviewed following any relevant changes in site operations or procedures that are likely to have implications from an emissions generation/impact perspective.

Appendix A: Complaints procedure

Action	Person responsible	Timescale
The Site Manager (SM) will be notified of the complaint and will make the appropriate managerial staff and site operatives aware of the complaint. The Environment Agency (EA) will also be notified of the complaint. The complaint will be acknowledged and shall be formally recorded using the Complaint Report sheet contained within the site Environmental Management System (EMS).	Site Manager	Within two working days of receipt of the complaint.
The complaint would be investigated by:- a) Checking the monitoring records to see whether the complaint corresponds to the monitoring records. b) Checking the Site Diary (SD) and waste acceptance records to see if any particularly dusty waste was accepted. c) Checking the SD to see whether the complaint corresponds to any operational issues at the site. If the cause of the complaint is established, it would be recorded within the Complaint Record Sheet. If no particular cause is identifiable then this would also be recorded.	Site Manager	Within one working day of receipt of the complaint.
If a number of complaints are received about a particular incident, then it might be necessary to increase the frequency of dust monitoring or to cease operations.	Site Manager	Within one working day of receipt of the complaint.
The SM would instigate any necessary reviews of procedures and would implement any required changes.	Site Manager	Within seven working days of receipt of the complaint.
If appropriate, the complainant and the EA would be informed of any corrective actions taken.	Site Manager	Within seven working days of receipt of the complaint.
A follow up audit on the corrective actions implemented shall be undertaken to ensure the complaint is not made again in the future and that the preventive procedure is effective.	Site Manager	Within two weeks of receipt of the complaint.
Once the follow up audit has been completed, the SM would ensure that the complaint and any action taken, and the effectiveness of that action are recorded in the EMS. This record shall also note any amendments to procedures, both environmental and health & safety, which may be required following the investigation. The record shall be kept in the site office at all times or if it is an electronic record, it would be accessible from the site.	Site Manager	Within two weeks of receipt of the complaint.

Appendix B: Dust Complaint Form

Complainant Details	
Complainant Name	
Address Postcode	
Tel	
Email	
Date	
Complaint Ref	
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 EA and/or BDC	
Date feedback given	
Feedback given to public (with date)	

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 DEMP need to be updated	
Date that the DEMP was updated	

Closure	
Site manager review date	
Site manager signature to confirm no further action required	

Appendix C: Operation Cessation Methodology

The following section details the assessment process to be taken when determining if and which activities on Site should stop to prevent excessive dust emissions.

Estimation magnitude of risk

The following table provides a matrix for estimating the magnitude of risk from a potential hazard, considering both the probability and consequences of the hazard occurring. The magnitude of risk determines the level of management required to reduce the probability of the hazard occurring. In this DEMP, the hazard is the excessive emission of dust from the Site.

Probability	Magnitude of risk	Consequence			
		High	Medium	Low	Negligible
	High	Very high	High	Medium/low	Very low
	Medium	High	Medium	Low	Very low
	Low	High/medium	Medium/low	Low	Very low
	Negligible	Low/medium/high	Medium/low	Low	Negligible

Ceasing of operations

Conditions	Probability	Consequence	Risk magnitude
Risk from waste storage			
Dry, cool weather (<20deg)	M	L	L
Dry, hot weather (>20deg)	M	M	M
Dry, hot (>20deg), windy (>4 Beaufort)	M	M	M/H
Dry, windy weather (>4 Beaufort)	M	M	M/L
Wet, windy weather (>4 Beaufort)	H	N	L
Dry, little wind (<3 Beaufort)	L	M	L
Gale-force winds (>8 Beaufort)	M	M	M/L
Plant failure or breakdown (spray bars or other essential water suppression or water supply)	M	H	M/L
Preventative and remedial mitigation measures not effective	L	H	H
Risk from other site activities			
Mud tracked onto highway in dry conditions	L	M	M
Mud tracked onto highway in wet conditions	M	L	L
Debris on site surface in dry conditions and still conditions (<4 Beaufort)	M	L	M/L
Debris on site surface in dry conditions and windy conditions (>4 Beaufort)	M	M	M
Debris on site surface in wet conditions	M	L	L

Risk magnitude	Action
Low	Continued implementation of preventative measures
Medium	Dust emissions are likely. Relevant activities* stop until additional remedial mitigation is implemented. Relevant waste activity may temporarily cease - can resume upon implementation of additional mitigation if measure is effective. Relevant waste activity must stop if excessive dust emissions are observed. Relevant waste activity can resume when the conditions no longer apply/ additional remedial mitigation is implemented and there are no significant dust emissions
High	Relevant waste activity will stop. In the case of waste storage this will mean either removal or covering of the offending waste within 1 day if remedial mitigation is not effective. Relevant waste activity can resume when the conditions no longer apply/ additional remedial mitigation is effectively implemented and there are no excessive dust emissions.

Dynamic risk assessment

Any scenario for which the Magnitude of Risk has not already been assessed for in Table 6-1 can be undertaken by completion of a dynamic risk assessment using the Risk Matrix in Table 5-2.

The dynamic risk assessment will be completed by the Site Manager and recorded. If the scenario is likely to recur, it will be added to the Dust Management Plan at the earliest opportunity.