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Dust & Emissions Management Plan (DEMP)

v0.1

Environmental and sustainability solutions provided to
Brockley Wood Ventures Ltd



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REVISION LOG

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1.0 INTRODUCTION

This Dust & Emissions Management Plan (DEMP) has been produced to accompany the required bespoke permit application for the Inert Waste Recycling Facility (IWRF) at Brockley Wood Inert Waste Recycling Facility.

After permit issue the plan will be adopted into the management system to ensure that operations do not impact significantly upon the environment. It has been produced in accordance with the EA Dust & Particulate Emission Management Plan Guidance 'Control and Monitor emissions for your environmental permit' (published 1st February 2016) and version 10 (October 2018) of the Dust & Emission Management Plan (DEMP) template, and relates to waste materials accepted, stored and treated at the site which have the potential to produce fugitive emissions.

The DEMP forms part of the Environmental Management System (EMS) that Brockley Wood Ventures Ltd operates to ensure that their operations meet high environmental standards and comply with the legislative requirements applicable to the site. The plan is intended to be a living document subject to on-going review and updating, with its intended audience being the staff at the site whose working practices can affect the emissions from the site.

1.1 Site Address

Brockley Wood Inert Waste Recycling Facility.
Belstead
Suffolk
IP8 4JW

1.2 Site background

The proposed IWRF will be located with Brockley Wood quarry. The plant will remain for the life of the quarry and will be removed at the end of site operations (including site restoration). The IWRF will process 'virgin' aggregates and process suitable incoming inert materials (<250,00tpa) for either:

- Use in the quarry restoration operations;
- Production of saleable product in accordance with the Aggregate Quality Protocol (Resource Framework); or

- Despatch from site as a waste for use by third parties under a suitable exemption/ waste management operation.

Related activities taking place at the entire site are:

- Aggregate extraction (permitted under the Mining Waste Directive)
- Concrete production (permitted by the Local Authority under Section 3.1 B(b) of the Environmental Permitting Regulations 2016)
- Site restoration

The site is located within Babergh District and Suffolk County Council boundaries. The site is not located within an Air Quality Management Area (AQMA).

The site is approximately 28.4km east of an AQMA at Cross Street, Sudbury. It is considered unlikely the proposal would cause air quality impacts over this distance. As such, the Cross Street AQMA has not been considered further in the context of this DEMP.

The proposals have the potential to cause air quality impacts because of fugitive dust emissions associated with the operation of the scheme, as well as road traffic exhaust emissions from vehicles travelling to and from the site. An Air Quality impact assessment was therefore undertaken to determine baseline conditions and consider potential effects arising due to the operation of the proposed plant. This is detailed in the Air Quality Environmental Impact Assessment produced by Redmore Environmental, (Reference 4730r1_17th March 2022) the conclusions of which are used in this DEMP.

Commented [SS1]: Is there more than one proposal going on? Is it not just one permit for the recycling facility?

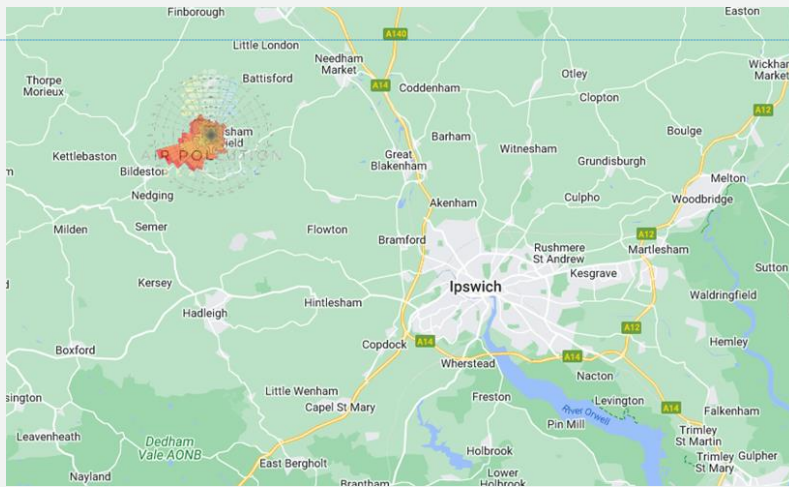
Site activities and infrastructure have been planned to ensure that emissions are reduced as far as possible, so compliance with this DEMP should ensure that the impact of the plant continues to be insignificant in operation. This DEMP will be a part of the Environment Management System (EMS) for the site and all staff that have an impact on permit compliance will be made aware of it through regular toolbox talks.

The extraction of sand and gravel is not a 'prescribed process. The crushing, grinding, screening and grading of wet material is not normally likely to result in the release of particulate matter into air except in a quantity which is trivial.

¹ Process Guidance Note 3/08(12) Statutory guidance for quarry processes (Sept 2012)

1.3 Weather data

2021 Met Office data for Wattisham in ADMS compatible format (hourly sequential data) has been used.



Commented [SS2]: Is there a reason why we are very zoomed out from Wattisham?

Figure 1 - Site location in relation to Met Office data

The site is classified as a rural flat site. Site classification is purely for information and is based on the proximity to the coast, the proportions of local land use classifications and topography. As such it is considered to be the most representative for the assessment.

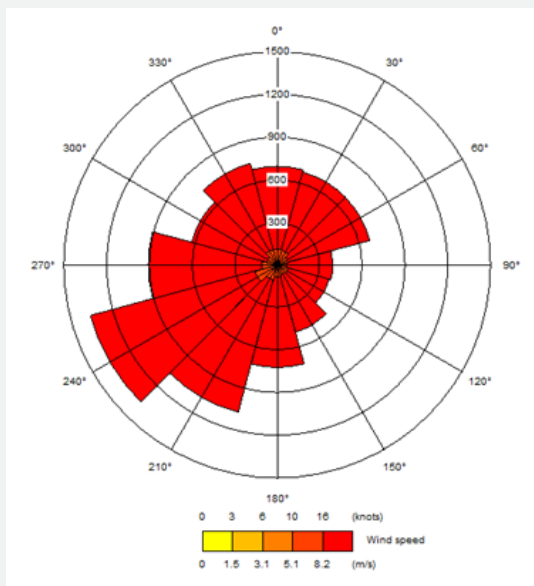


Figure 2 - Wind rose (Wattisham Airfield)

1.4 Sensitive receptors

A sensitive receptor is defined as any location which may be affected by air quality impacts as a result of the operation of the quarry. These are detailed within Table 1 and Table 2.

Table 1 - Identified sensitive ecological receptors

Receptor	Type	Direction	Distance (m)
Old Hall Wood CWS	Ecological	E	0
Brockley Wood CWS	Ecological	E	0
Bentley Long Wood [Ancient Woodland]	Ecological	SE	125

Table 2 - Identified sensitive receptors

Receptor	Type	Direction	Distance (m)
1 - Tudor House	Residential	W	625
2 - Red House	Residential	NW	700
3 - Hare Cottage	Residential	N	750
4 - Croke Hall	Residential	ENE	800

5 - Charity Farm	Residential	NE	105
6- Bentley Old Hall	Residential	ESE	375
7- London Road	Infrastructure	ENE	800
8 - A12	Infrastructure	E	300

1.5 Other local sources of dust emissions

The assessment also takes in to account the principal existing dust sources such as existing mineral operations, agricultural activities and construction works. The scale and nature of the works taking place at a scheme determines the level of residual dust emissions from fugitive sources. The following activities on mineral extraction sites are likely to have the greatest potential for dust emissions:

- Site preparation/restoration (including soil and overburden handling);
- Mineral extraction (including blasting);
- Material handling;
- On-site transportation;
- Mineral processing;
- Stockpiling/exposed surfaces; and,
- Off-site transportation.

Table 3 - Sources of dust and/or other emissions

Company	Address	Business type	Distance (m)
Brockley Wood Ventures	BW Quarry	Mineral extraction	<50
Brockley Wood Ventures	BW Quarry	Concrete manufacture	0

2.0 IWRP SITE OPERATIONS

2.1 Waste deliveries to the IWRP site

Inert waste will be delivered to the site by;

- 32t LGV tippers
- Hi Ab LGV (grab lorry)
- Skip wagons (hook and chain and ro-ro)
- Dump trucks from the adjacent quarry

All LGVs operated by the operator will have a Euro 6 emission rating. It is likely that 3rd party hauliers will be at least Euro 5 emission rating.

All 8-wheel tipper vehicles will be fitted with a fly sheet and 44t articulated LGVs fitted with an easy sheet.

Skip wagons/grab lorries will also be sheeted.

2.2 Overview of waste processing, dust and other emission controls

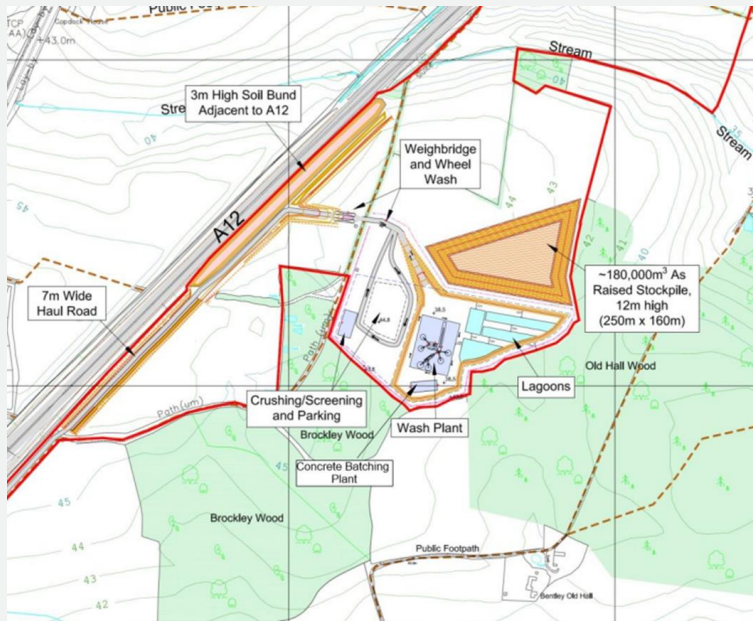


Figure 3 - Site layout

Figure 4 - Typical waste types brought to the Brockley Wood IWRf

EWC	Description	t/wk	Destination within facility					Process
			Crushing	Screening	Washing	Storage	Storage	
Total								

2.3 Mobile plant and equipment

Nitrogen Dioxide (NO₂) gas and Particulate Matter (PM) 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 ratings² for the mobile plant and equipment used on site:

Table 4 - Site equipment

Description	Make	Model	Emission rating
Bulldozer	Komatsu	D65PX-18	Tier IV
360° Excavator	Komatsu	PC210	Stage V
Tractor	Case	MXM190	
Dumper truck (x2)	Volvo	A30G	Stage V
Telehandler	JCB	535-95	Stage V
Road sweeper	tbc		

All machines are operated on a leased 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 'interim tier 4' 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.

² <https://shropshire.gov.uk/media/2972/european-emission-standard.pdf>

3.0 DUST AND PARTICULATE (PM₁₀) MANAGEMENT

3.1 Responsibility for the implementation of the DEMP

Brockley Wood Ventures' Compliance Manager (CM) 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;

- i. Vehicles entering/leaving site with mud on wheels
- ii. Vehicles and plant moving around the site kicking up dust
- iii. Material falling from vehicles
- iv. Discharging of waste materials
- v. Site surfaces
- vi. Loading materials
- vii. Particulate emissions from the exhaust of vehicles/plant/machinery on site.
- viii. Material crushing
- ix. Material screening
- x. Stockpiling materials
- xi. 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.

The IWRF is located centrally within the sand and gravel extraction facility, so operations are well matched to the immediate surroundings.

Table 5 - Source-Pathway Receptor routes

Source	Pathway	Receptor	Impact	Control
Vehicles entering or leaving site with debris on wheels	Tracking dust on vehicle tyres	Local residents/businesses	Visual soiling, also consequent resuspension as airborne particulates	Vehicles unlikely to have come in to contact with mud prior to accessing the site. Wheel wash and long-haul road ensures no debris is deposited on the public highway.
Vehicles and plant moving around the site kicking up dust	Atmospheric dispersion	Local residents/businesses	Airborne particles	10mph 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	Visual soiling, also consequent resuspension as airborne particulates	Sides/lips of tipping bodies swept before departure to remove any accumulated materials.
Discharging of waste materials	Atmospheric dispersion	Local residents/businesses	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.
Site surfaces	Contamination of trafficked areas.	Local residents/businesses	Visual soiling, also consequent resuspension as airborne particulates	Site surfaces that are used by traffic will be regularly cleaned along with the measures described above.
Loading materials	Atmospheric dispersion	Local residents/businesses	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.
Particulate emissions from machinery exhausts	Atmospheric dispersion	Local residents/businesses	Airborne particles	Anti-idling campaign in place. Low emission plant always used.

Material crushing	Atmospheric dispersion	Local residents/businesses	Airborne particles	Warrior 1800 and Terex Finlay C-1554 fitted with dust suppression equipment. Material crushed using a crusher on 360° presents a minimal risk of releasing dust.
Material screening	Atmospheric dispersion	Local residents/businesses	Airborne particles	Warrior 1800 and Doppstadt SM620 fitted with dust suppression equipment.
Stockpiling materials	Atmospheric dispersion	Local residents/businesses	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	Airborne particles	During hot, dry and windy conditions stockpiles will be sprayed with water.

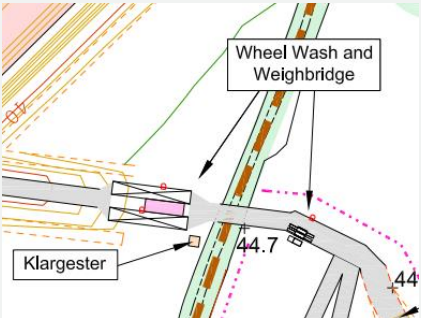
				Stockpiles may be capped if necessary.
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Table 6 - Measures that will be used to control dust/particulates (PM) and other emissions

Abatement measure	Description/effect	Overall consideration and implementation	Trigger for implementation
Preventative measures			
Site layout in relation to receptors	Crushing and screening activities that emit dust particles are located relatively centrally in the quarry setting 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;	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 will be a Standard Operating Procedure (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.

		• Good process design to minimise emissions; • Abatement or control to reduce dust emissions; and, • Disrupting the emission pathway to sensitive receptors	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 10mph 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. 10 mph 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.	Control measure will always be in place during site operations and will form a part of toolbox talks on an ongoing basis.

		These steps are identified clearly in the site management system and implemented as appropriate measures.	
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.
Wheel wash installed (Ecowash Extra)	Provides a high-pressure wash of vehicle wheels and lower parts (including under body) using a series of jet sprays.	In two-wheel revolutions, the targeted spray configuration effectively cleans the tyre through 11 strategically placed delivery pipes, spraying narrow fans of	Wheelwash to be installed as a part of infrastructure construction.

		water at up to 5 bar. Staggered positioning of nozzles minimises striping, and the spray pattern combined with galvanised high side screens retain water in the system.  Positioned before the weighbridge so vehicles must travel through before they exit. Automatic entry and exit sensors.	
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 level by vehicles and site activities. Enforcement of the 10mph speed limit will limit re-	Provision of a two-way metalled road between the A12 and operational area; Haul roads to have a consolidated but permeable surface;	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

	suspension of particulates by vehicle wheels.	- All active site roads will have an imposed speed limit of 10mph; - Main access roads to be swept with a mechanical road sweeper as and when conditions dictate;	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.	It Is not always possible to minimise storage heights due to the ongoing extraction and site phasing plan as this has the related impact of increasing the footprint of the stockpile. Due to the nature of the inert recycling sector, large volumes of material are often treated on a campaign basis so large volumes of material are present on site. High volume machines ensure that this is processed as swiftly as possible.
Reduction in operations (waste	Reducing the amount of activity on site, including no tipping, crushing, or screening of high risk loads during windy weather as	The site has procedures in place to reduce activity on site if required through complaints or	All crushing and screening equipment is fitted with suppression equipment to reduce dust emission potential.

throughput, vehicle size, operational hours)	well as associated traffic movements should result in reduced emissions and re-suspension of dust and particulates from a site.	known issues, or adverse weather conditions. This includes a weather station to monitor windy weather to modify working procedures if required.	Material with inherent moisture greater than 3%, e.g., sand or gravel, would not be expected to give rise to emissions of dust. Only the following material will be stored in the open: - o material that has been screened to remove material 3 mm and under; - o sand; - o scalpings; - o material used for road sub-bases commonly known as "MOT material", or "type 1" or "type 2" material) that has been conditioned before deposition; - o crusher run material that has been conditioned before deposition
Remedial measures			
On-site sweeping	Sweeping could be effective in managing larger debris, dust and particulates but may	Easy to apply but less effective than other measures.	Roadways in normal use and any other area where there is regular movement

	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. 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.	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).	of vehicles have a consolidated 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	During hot, dry and windy conditions stockpiles will be sprayed with water. Stockpiles may be capped if necessary.

		is dropped. 'Halo' rings can be fitted to conveyor drops on concrete crushers and screeners to minimise dispersion.	
Water suppression with bowser	Using bowzers 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 haul 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.

3.3 Other considerations

Water usage/ availability:

The site will have a dedicated water supply as associated activities include;

- Gravel washing (itself a dust suppression measure)
- Concrete batching plant

The wheel wash, (Ecowash Extra) is powered by an inverter-driven wash pump which provides up to 50% operational cost savings, as well as effectively recycling water in a closed loop system. Comprising of a tough 6m wash platform, with recycling tanks, this heavy-duty steel system has unparalleled cleaning power. In two-wheel revolutions, the targeted spray configuration effectively cleans the tyre through 11 strategically placed delivery pipes, spraying narrow fans of water at up to 5 bar. Staggered positioning of nozzles minimises striping, and the spray pattern combined with galvanised high side screens retain water in the system.



Figure 5 - Ecowash Extra

The dust prevention measures do not rely on general, non-specific, use of water. Water use is deliberately targeted to reduce wastage but also to ensure effective use and is not relied upon as the sole control measure.

In the event of a drought dust emissions will remain abated and not cause pollution.

3.4 Enclosure of waste processing & storage areas

Due to the nature of the input materials and scale of the inert recovery operation it is not possible to enclose the processing operation or storage areas.

3.5 Visual dust monitoring

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 as they are uniquely placed to observe and react to the effects of the operation they are carrying out at the time. Any observed problems will be reported to the Site Manager who will investigate the cause and implement any necessary remedial action.

There are no set locations around the site perimeter as the weather conditions and operations change, so that a fixed location may not always be representative.

There is no out of hours provision for dust monitoring due to the location of the site and the absence of any mechanical operations that may increase the potential for dust emissions to be generated. The operational hours are specifically stated within the planning permission for the site and limit the hours for both movement of vehicles and operation of externally located machinery.

Should regular complaints be received outside of operational hours over a period of two weeks or more dust mitigation measures will be reviewed. This may include the potential for stockpiles to be dampened prior to the end of the operational day.

It is acknowledged that certain operations (loading, screening, crushing) increase the potential for heightened releases of dust and other emissions. As such increased monitoring takes place, the location of such checks will take wind strength, direction and operation underway into account.

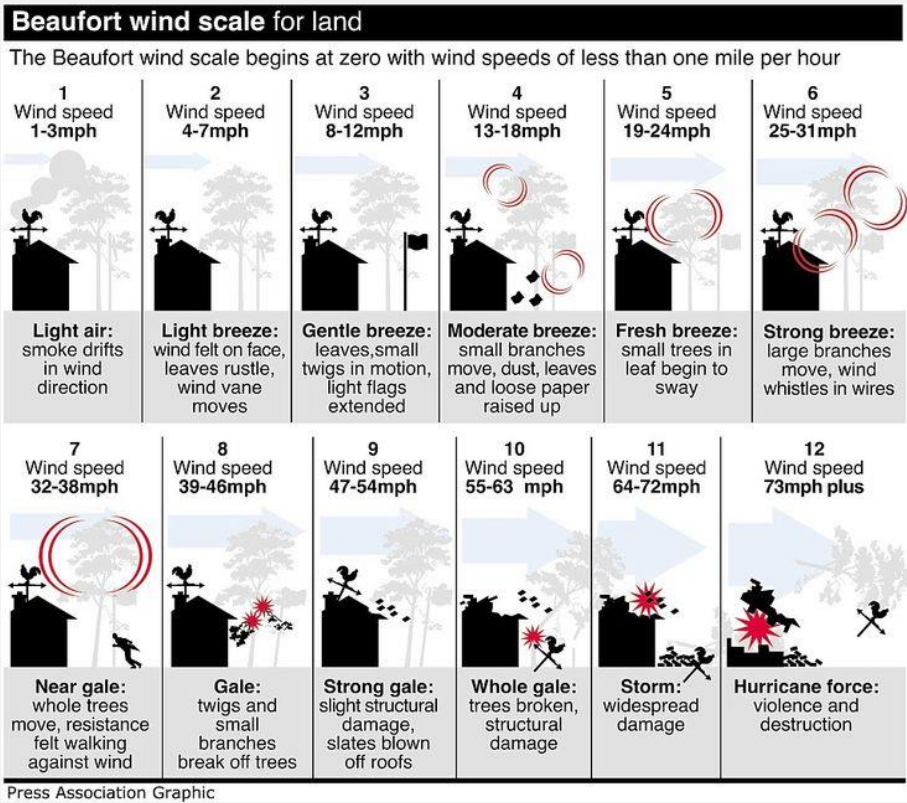


Figure 6 - Beaufort wind speed scale

Any formal monitoring undertaken will be recorded in the site diary. Where monitoring is undertaken it will be recorded.

Should a complaint be raised the form in appendix A will be completed to investigate and understand the potential issues. Where these are completed over a period a fuller picture will emerge as to the most successful strategies for deciding as to whether further controls are required.

Operating hours are defined, and conditioned, within the extant planning permission as follows;

Externally located plant and equipment shall not be used, except during the following hours:

- 0800 to 1800 Monday to Friday; and
- 0800 to 1300 Saturday.

No vehicles (including forklift trucks) shall enter the site, leave the site, manoeuvre, be loaded, or be unloaded within the site, except during the following hours:

- 0700 to 1800 Monday to Friday; and
- 0700 to 1300 Saturday.

4.0 PARTICULATE MATTER (PM) MONITORING

The site is located within a sand and gravel quarry, itself located in relatively open countryside at least 250 m 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 treatment of certain dry waste materials on the concrete pad.
- Crushing/screening operations of inert/soil type wastes during the treatment process.

Site staff supervising individual waste handling operations will, during the undertaking out 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 within a sand and gravel quarry, itself located in relatively open countryside at least 250 m 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 north east, the monitoring route will be to the north east 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 odour 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, routine dust monitoring would take place during crushing and/or screening operations.

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 risk assessment has concluded that emissions of dust were able to be screened out as insignificant. 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;
- 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

Dust monitoring at the site boundary will be carried out as part of routine daily site inspections with any observations recorded and retained onsite.

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 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, the stockpile and distance to receptors will afford screening for unprocessed and processed stockpiles. Where regular complaints are being received outside of operational hours over a period of two weeks or more 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).

5.0 ACTIONS WHEN ALARM IS TRIGGERED

The following actions are taken:

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 7 - 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 broad enough to allow flexibility to wait for suitable weather conditions. (Cease processing and remove if excessively dusty)	Dust not detected at site boundary.
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.	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.

		Areas will be swept when empty to prevent dust blowing.			
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.

6.0 REPORTING AND COMPLAINTS RESPONSE

6.1 Engagement with the community

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 Brockley Wood Ventures 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 would be a display board at the site entrance which details the site name, permit number, the Environment Agency's contact details and BWV 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 would be responsible for the implementation of this Dust and Emissions Management Plan. All site staff would receive instructions on how the plan is to be implemented during toolbox talks on site.

6.4 Summary

Inert waste processing and soil manufacturing operations are capable of producing dust and particulate emissions, however the dust produced will be limited by the nature of the operations and mitigation measures. In any event emissions can be controlled to confine and prevent their escape and to minimise airborne dispersal.

At the Brockley Wood Quarry site, the main emission causes relate to the screening and crushing operation and transportation.

Processing emissions will be 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 Brockley Wood Quarry site preventing adverse dust impacts off site.

This DEMP will be formally reviewed by the Brockley Wood Ventures Ltd., initially six months after commencement of operation, and from then on, on an 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.

7.0 SOURCES OF INFORMATION

Air Quality Environmental Impact Assessment Brockley Wood, Belstead - Redmore Environmental Ltd March 2022 [4730r1]

Holman et al (2014). IAQM Guidance on the assessment of dust from demolition and construction, Institute of Air Quality Management, London.
www.iaqm.co.uk/text/guidance/construction-dust-2014.pdf. v1.1 [June 2016]

Process Guidance Note 3/16(12) Statutory guidance for mobile crushing and screening [September 2012] Defra

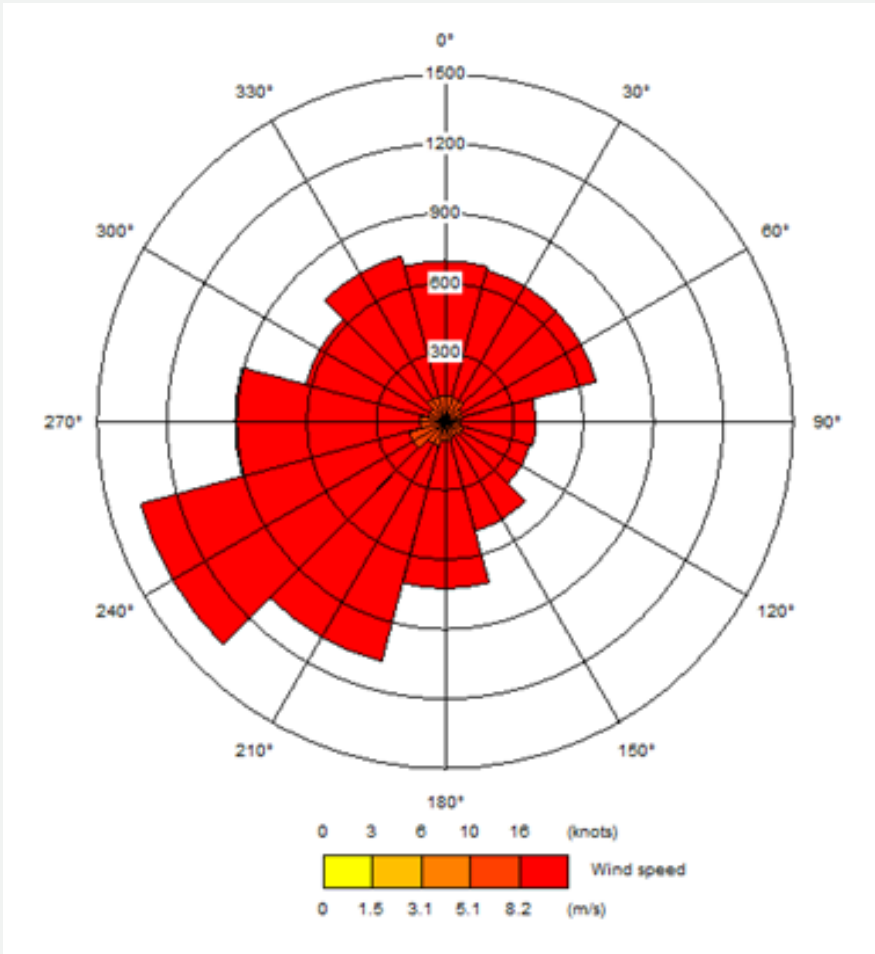
IAQM Guidance on the assessment of dust from demolition and construction v1.1 [June 2016]

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	

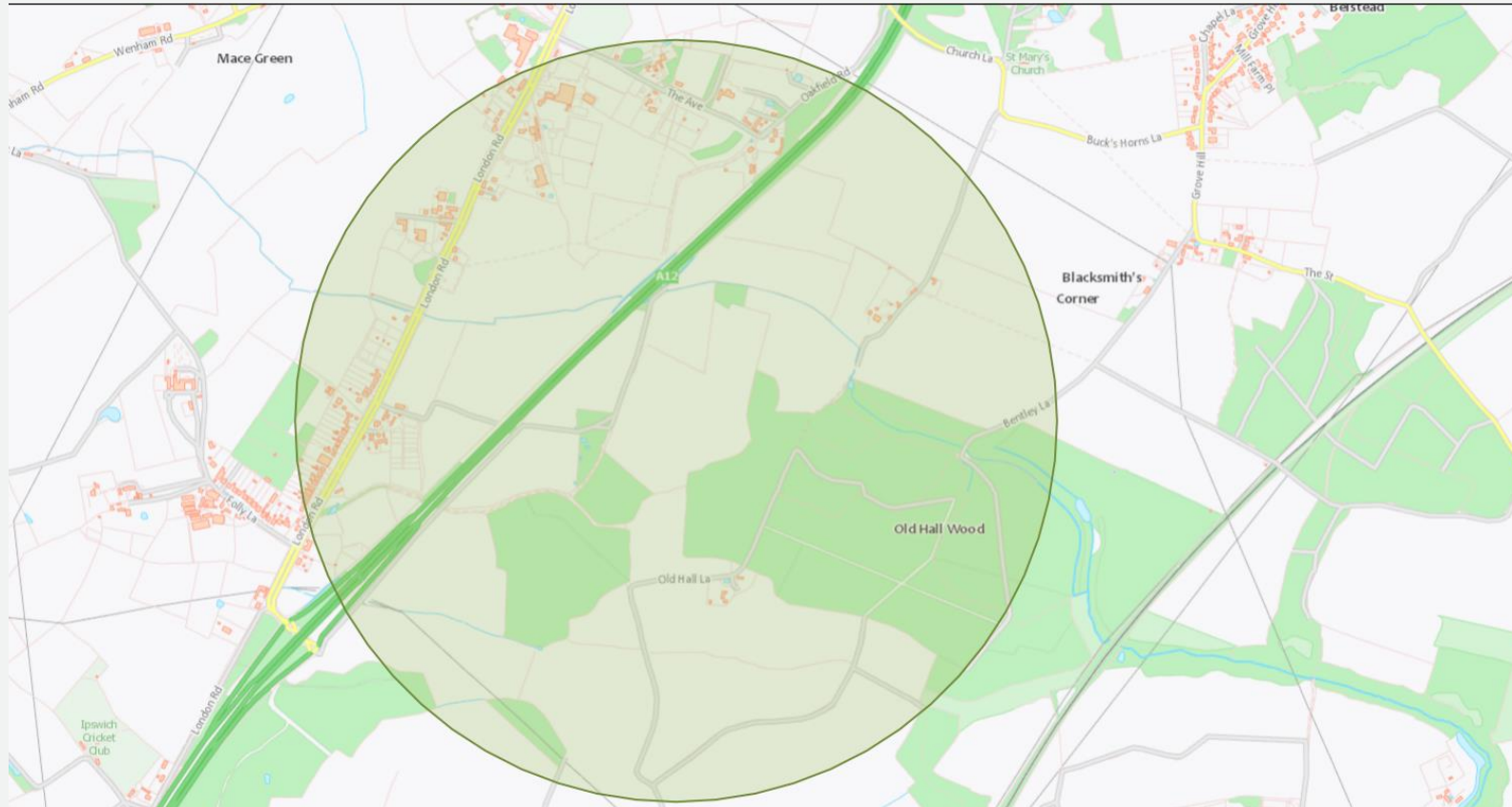
Site manager signature to confirm no further action required	
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APPENDIX A: DUST COMPLAINT FORM

APPENDIX B: WIND ROSE



APPENDIX C: SENSITIVE RECEPTOR PLAN



APPENDIX D: 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 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.