Dust Management Plan

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Introduction

Environmental Focus Ltd has been commissioned by Enviroventure Waste Solutions Ltd. to prepare a Dust Management Plan (DMP) that focusses mainly on Dust generation to support an application for to vary the permit held.

The requirement for this a DMP is due to the Site accepting and treating both mixed wastes, wood and inert materials. All of which, when stored or treated have the potential to create dust emissions.

This DMP has been prepared in accordance with the H4 Dust and Particulate Emission Management Plan and Gov.uk Guidance documents `Control and monitor emissions for your environmental permit` (published 1st February 2016). A review of the potential production of dust relating to waste storage and/or treatment has been undertaken. This document aims to identify potential sources and potential impacts. Mitigation measures have been detailed that firstly help in the reduction of any dust being created in the first place and secondly to remove the creation of dust emissions if they have occurred.

Located within a well-established, large industrial estate on the outskirts of Milford Haven there are numerous other businesses that could be impacted and need consideration, additionally, several isolated residential houses and a more established population are also within 500m. There are no environmental designations located within 1km of the site other than an ancient woodland within 50m to the North.

The entire surface of the Site comprises of reinforced concrete across all areas of treatment and storage. Encompassing the entire boundary of the Site is a minimum 150mm Kerb along with fencing at 2m height along all open borders. To the rear of all waste storage areas is a fixed wall system that extends to approximately 3m high. For the site layout see the attached site plan.

The annual throughput will be less than 5000t/yr, with the maximum tonnages/day shown below:

Incoming waste type	Max. t/day
Mixed C&D wastes x1	50
Mixed HCI wastes x1	25
Wood wastes x1	50
Separated out fractions	*Approx values*
Plastic x2 (1skip & 1 bale pile)	*2*
Cardboard x2 (1skip & 1 bale pile)	*2*
Metals x1 skip	*3*
WEEE x1 skip	*0.25*
Shredded Pile x1	*Highly varied-input dependant*
Trommel Fines x1	*Highly varied-input dependant*
Inert	*50-60*

The Site is not located in a designated Air Quality Management Area (AQMA).

Meteorology

Statistics based on observations taken from the nearest weather station at Milford Haven (c. 4 km southwest of the Site) between June 2006 and February 2026 indicate that, although the prevailing winds are variable, they originate predominantly from the west-south-west with an average speed of 11 knots (Diagram 1). The rose diagram in Diagram 2 is conducive of this showing the wind strength distribution and direction is also chiefly from the W-S-W. Data obtained from [Wind & weather statistics Milford Haven - Windfinder]

Diagram 1 Average Prevailing Wind Direction and Speed

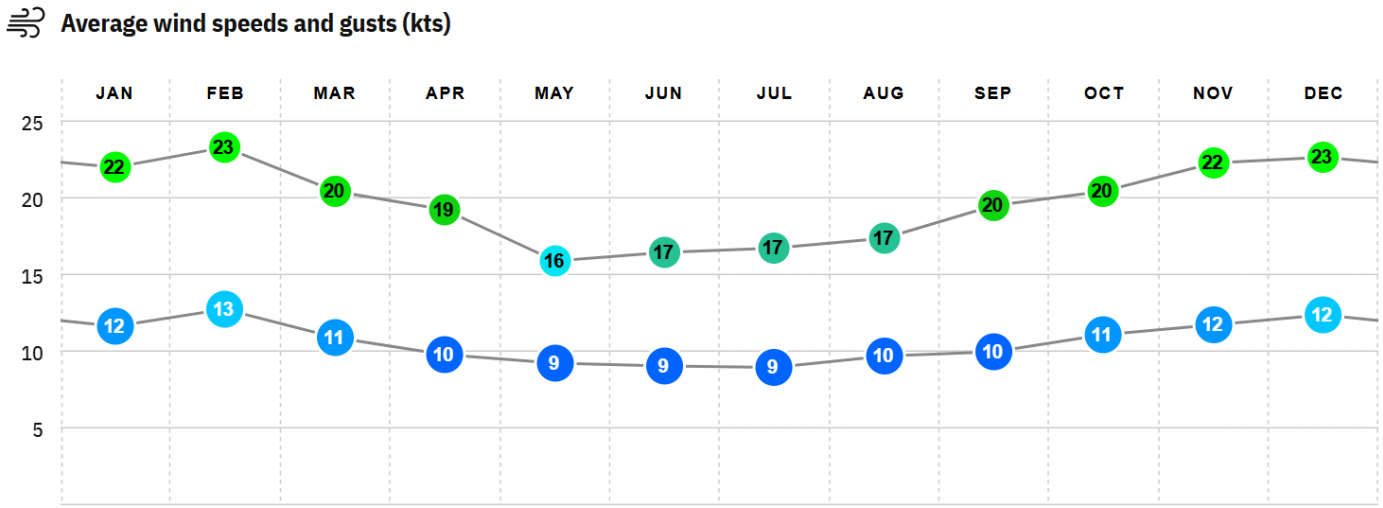
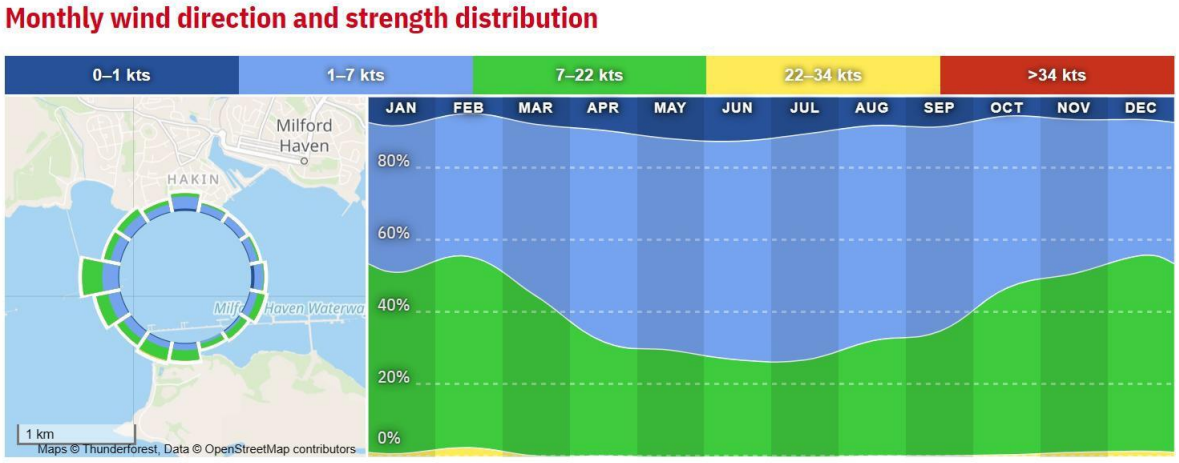


Diagram 2 Rose Diagram showing Wind Strength Distribution and Direction



Sensitive Receptors

A review of potentially sensitive receptors within a 1km radius of the Site has been undertaken. The most vulnerable sites have been used such as hospitals, schools, childcare facilities, elderly housing and convalescent facilities. Food manufacturers, major infrastructure and environmentally protected are also considered, see ***Table 1*** and ***Diagram 3***. Residential properties are considered separately, and their locations are detailed in ***Table 2*** and ***Diagram 4***.

In terms of potential exposure levels, they have been determined via qualitative assessment which reviews the likelihood of exposure based on the proximity of the receptor to the site.

A list of the identified sensitive receptors along with the overall exposure levels and principal receptor features has been tabulated below. For each receptor within the categories the determination of the overall risk classification has been provided.

Institute of Air Quality Management (IAQM) Guidance on the Assessment of Mineral Dust Impacts for Planning (May 2016) states that *"it is commonly accepted that the greatest impacts will be within 100m of a source and this can include both large (>30 µm) and small dust particles. The greatest potential for high rates of dust deposition and elevated PM10 concentrations occurs within this distance. Intermediate-sized particles (10 to 30 µm) may travel up to 400m, with occasional elevated levels of dust deposition and PM10 possible. Particles less than 10 µm have the potential to persist beyond 400m but with minimal significance due to dispersion."*

There are no protected or environmental designations within 1km of the site:

- Site of Special Area of Conservation (SAC) the Pembrokeshire marine Littlewick Point to Brunel, 1.6km to the South.
- Site of Special Area of Conservation (SAC) the Pembrokeshire Marine Westfield Pill Lagoon, 3.2km to the East.
- There are several scheduled monuments within proximity of the site including Fort Scoveston to the Northeast (1.1km), the Castle Pill to the West (1.3km) and the American War of Independence redan at Bath House to the Southeast (3.5km).
- There are approximately 10-15 listed buildings within proximity of the site, however none of which are within 1km of the site. The main bulk of the buildings are located to the West of the site and the closest is at 1.1km away (Castle Hall Lodge and Farm).
- There is also a small drainage ditch that serves the agricultural field at the rear of the site, located to the North at approximately 80m. The ditch is surrounded by an Ancient woodland which at its closest is at just 45m.

However, the mitigation measures detailed within this plan will be used to reduce the risk to all designations.

Table 1: Representative Sensitive Receptors (excluding residential properties). (Reference Point refers to locations on Diagram 3)

Receptor Hierarchy	Facility and Reference Point	Distance and Direction from Site (m)	Overall exposure level	Comments
Medical Facilities	Not identified within 1km			n/a
Childcare	Not identified within 1km			n/a
Elderly Housing	Not identified within 1km			n/a
Recreational Areas	Waterstone Park (1)	800 SE	Low	Located away from the prevailing wind direction and a long way from the site allowing for high dispersal rates.
Places of Worship	Not identified within 1km			n/a
Food/drink Manufacture	Not identified within 1km			n/a
Other	Grass Roots Caravan and Glamping (2)	730 E	Low	Located downwind of some of the strongest winds but is a long way from the site allowing for high dispersal rates.
Environmental	No protected sites identified within 1km. Only an ancient woodland and drainage ditch (5)	45m N	Medium	Not directly downwind of the Site but due to distance, could be impacted even if wind was SW. This area is considered very close. Impacts on the woodland would be greatest especially if wind was coming from the South.
Commercial or Industrial areas & monuments	Valero Oil Refinery (3)	300 - 1000 S and SE	Low	Range of distances from the site and away from the prevailing wind direction.
	Waterstone Industrial Estate (4)	10 - 300 All South	High - Medium	Not directly downwind of the Site as the site is located on the northern most edge of the industrial estate, however, most units are considered very close. Impacts on the estate would be greatest especially if wind was coming from the North.

Diagram 3: Sensitive Receptors within a 1km radius of the Site

Table 2 Distances to Selected, Representative Residential Properties/ Industrial Locations (reference point refers to location numbered on diagram 4).

Location in relation to the Site	Reference Point	Min/Max Distance(m) from Site Boundary	Overall Exposure Levels
SE	Waterstone Village (1)	350-780	Medium-Low
E	Farm (2)	300	Medium
E	Farm (3)	900	Low
NE	Farm (4)	950-1000	Low
SW	Farm (5)	450	Medium-Low
SW	Residential House (6)	220	Medium-Low
SW	Residential House (7)	450	Medium-Low
W	Farm (8)	650	Low

Diagram 4: Residential/Industrial Sensitive Receptors within a 1km radius of the Site

Other sources of aerial emissions have been identified in this plan. Contributing factors include any industry or transportation type that may generate dust and particulate matter from operational processes within a 1km radius of the Site, as shown in **Table 3.**

Table 3 Other Potential Emission Creating Operators

Company	Address	Type of Business	Approximate distance from site boundary (m)
TBS Waste Services	Waterston Industrial Estate	Waste / recycling	10
Pembrokeshire County Surfaces Ltd	Waterstone Industrial Estate	Paving/concrete	70
Valero Oil Refinery	Waterston Lane, Waterston	Industrial	280

Management of Waste Storage

Waste Deliveries

All vehicles delivering wastes to the Site stop at the gate and are visually checked. All site staff are suitably trained and follow documented acceptance procedures outline in the EMS.

A supervisor or yard operative instructs the drivers to reverse into the appropriate area within the site as appropriate, for off-loading to ensure materials are stored and processed accordingly. This helps to ensure the cleanliness of recyclable materials is maintained and materials are correctly stored and handled.

A visual inspection of the contents of all waste loads, including any received in enclosed containers, is made during deposit.

Any discrepancies found because of the checks detailed above results in the vehicle being held whilst some, or both, of the following decisions are taken:

- Redirection of delivery vehicle off Site, to a suitably authorised facility; and
- If the waste has been discharged on the floor, removal of the waste to a secure area, prior to off-Site removal either to the waste producer or suitably authorised facility.

A review has been carried out for each waste type with regards to the risk of generating emissions when put through the proposed treatments and are categorised in **Table 4** below as either a low, medium or high risk.

Wastes comprising solely of dust are not accepted at the Site. If upon receipt at the Site and on inspection a waste stream is incorporated with a lot of dust, it will not be accepted at the Site. It is recognised however that within the waste delivered to the Site there is the potential for it to contain quantities of dust. On deposit, if large amounts of dust are identified within a load, it will be dampened down with the water bowser or a hose and if required, re-loaded and removed from site.

Table 5 identifies considers the treatment processes that are to be undertaken at the site. Each stage of the process has been identified, and a subsequent risk rating has been applied for each stage. An overall rating has been given for the waste treatment stages of the individual waste groups. For all medium and high rated processes, the mitigation measures detailed in this plan will be initiated to lessen the risk of dust emissions leaving site or being created in the first instance. There will be different levels of mitigation required depending on the level of potential (or actual) dust release.

Waste reception/export factor in the loading and unloading of transport vehicles, the treatment processes take account the internal movements of waste, to get to the area of plant required for treatment (for example, the movement of waste from the reception area to the storage area if required).

Table 4 Waste Streams Typically Stored/Treated at the Site

Waste code	Description	Risk
02	**WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING**	
02 01	**wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**	
02 01 10	waste metal	Low
07	**WASTES FROM ORGANIC CHEMICAL PROCESSES**	

07 01	**wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals**	
07 02	**wastes from the MFSU of plastics, synthetic rubber and man-made fibres**	
07 02 13	waste plastic	Low
15	**WASTE PACKAGING, ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**	
15 01	**packaging (including separately collected municipal packaging waste)**	
15 01 01	paper and cardboard packaging	Low
15 01 02	plastic packaging	Low
15 01 03	wooden packaging	Low
15 01 04	metallic packaging	Low
15 01 05	composite packaging	Low
15 01 06	mixed packaging	Low
17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**	
17 01	**concrete, bricks, tiles and ceramics**	
17 01 01	concrete	Med
17 01 02	bricks	Med
17 01 03	tiles and ceramics	Med
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	Med
17 02	**wood, glass and plastic**	
17 02 01	wood	Med
17 02 02	glass	Low
17 02 03	plastic	Low
17 03	**bituminous mixtures, coal tar and tarred products**	
17 03 02	bituminous mixtures other than those mentioned in 17 03 01	Low
17 04	**metals (including their alloys)**	
17 04 01	copper, bronze, brass	Low
17 04 02	aluminium	Low
17 04 03	lead	Low
17 04 04	zinc	Low
17 04 05	iron and steel	Low
17 04 06	tin	Low
17 04 07	mixed metals	Low
17 04 11	cables other than those mentioned in 17 04 10	Low
17 05	**soil (including excavated soil from contaminated sites), stones and dredging spoil**	
17 05 04	soil and stones other than those mentioned in 17 05 03	Med
17 05 08	track ballast other than those mentioned in 17 05 07	Med
17 08	**gypsum-based construction material**	
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01	Low
17 09	**other construction and demolition wastes**	
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	Med-high
19	**WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE**	
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**	
19 12 01	paper and cardboard	Low
19 12 02	ferrous metal	Low

19 12 03	non-ferrous metal	Low
19 12 04	plastic and rubber	Low
19 12 05	glass	Low
19 12 07	wood other than that mentioned in 19 12 06	Med-high
19 12 09	minerals (for example sand, stones)	Med-high
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**	
20 01	**separately collected fractions (except 15 01)**	
20 01 01	paper and cardboard	Low
20 01 02	glass	Low
20 01 08	biodegradable kitchen and canteen waste	Low
20 01 34	batteries and accumulators other than those mentioned in 20 01 33	Low
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	Low
20 01 38	wood other than that mentioned in 20 01 37	Med-high
20 01 39	plastics	Low
20 01 40	metals	Low
20 02	**garden and park wastes (including cemetery waste)**	
20 02 01	biodegradable waste	Low
20 02 02	soil and stones	Med-high
20 03	**other municipal wastes**	
20 03 01	mixed municipal waste	Med-high
20 03 07	bulky waste	Low

Table 5 showing the individual treatment processes and risk rating for dust creation

Waste group	Treatment Stage	Treatment Type	Each stage Risk	Overall Dust risk
Mixed C&D/HCI waste	Reception, storage, treatment, export	Trommel Screening Shredding	Low, Med, Med, Med	Medium
Wood waste	Reception, storage, treatment, export	Shredding	Low, Med-high, Low	Medium-high
Plastic and Cardboard	Reception, storage, treatment, export	Manual/mech Pick Baling	Low, Low, Low, Low	Low
Other-bulk up/manual picking wastes only	Reception, storage, treatment, export	Manual/mech Pick only	Low, Low, Low, Low	Low

Overview of Waste Processing and Normal Dust Controls

Processing at site

The site comprises several reception areas identified for mixed C&D material, mixed HCI material and one for wood wastes. The site then has a dedicated areas for the processed materials.

Waste delivery vehicles are directed to reverse into the appropriate bay within the site according to availability.

All external treatment of wastes through the site are all activities of processing likely to have the potential of causing dust creation. When the residual wastes (post manual/mechanical pick) are fed through the Trommel, any inert (soil, stones/aggregate etc) will be separated out from the lighter residual element. The inert material will then (on a different day) be fed through the screening plant to ensure a cleaner product for ease of recycling. Once the above processes have been undertaken for the entire stockpile, the residual element is stored in readiness to be shredded then removed from site. The shredding will also be undertaken on the wood stockpile; this also has the potential to generate dust.

As a precaution and to ensure potential emissions are not dispersed, dust abatement/monitoring techniques are carried out on-site and are outlined in the following points. The baling is not a dusty process and so will not form part of this management plan.

All plant is fitted with a dust abatement system; including an internal sprinkler system that can be switched on and off when required. The internal operation will be initiated as a first response to any dust identified within the visual monitoring rounds detailed within Table 7. This is the most likely measure to control dust emissions at source when processing.

A water tank is available on site for damping down upon reception, storage and loading it to the treatment plant if required. This is manually operated by the supervisor and is refilled by rainwater (or tap during drought). The tank has a capacity of 10,000l and is only to be used when dust is noted to be leaving the site boundary. This will be used for treating waste, truck movements or in windy conditions. The site also has micro-netting installed along the Northern boundary of the site, this will be extended along the other waste storage edge of the site (East) if required to control the migration of dust-off site. However, this will only be undertaken if other control and mitigation measures identified in this document fail to work effectively.

Post treatment, the material is to be stored in a bay/skip externally before being removed from site. Covers will be used if required to reduce impacts from the weather (wind) potentially creating dust emissions leaving site, the covers are stored in the weighbridge office/store and can be used quickly if required. The material to be removed from site is loaded from here. All stockpiled material will be at least 0.5m below the top of the bay wall to reduce the wind whipping impacts with consideration of the direction of the bay where possible. Spraying of stockpiles will also be implemented during the drier seasons where dust is identified as a possible issue during monitoring. Stockpile heights and storage times will be kept to a minimum and generally volumes will be as low as possible as general working practice.

Loading is undertaken with as low as possible drop heights and the vehicles are sheeted as they leave.

All potential dust creating activities on site are located as far from the closest receptors as possible.

All on site vehicles are limited to 10mph speed limits to prevent dust creation from traffic across the site.

The yard areas of the site are swept daily to ensure that dust does not build up. In periods of prolonged dry weather (7 days without rain), water sprays will be used across all operational site surfaces to contain dust if required. This will include the internal roadway area of the site that leads from the operational area to the main entrance off the road.

The Site is managed by people who have relevant experience, and who are technically competent and familiar with the design and operation of the Site. A site-specific risk assessment and Environmental Management System (EMS) is adhered to minimising the risk of dust release.

Working hours will be limited to 07:00-17:00 Monday to Friday and 07:00-13:00 on Saturday.

Drop heights will be always minimised where possible.

All machinery in operation on site will be maintained in accordance with the manufacturer instructions. All treatment plant (not the baler) is to be hired in from a supplier, so will be maintained at their company policy.

Throughout the life of the Site, the operations will be subject to inspections by management and may have recorded visits from officers of Natural Resources Wales (NRW). The Site operations and documented procedures will be reviewed and improved as necessary in accordance with site EMS.

The surfaces and containment area are inspected regularly to check for any defects or damage to their integrity. Any necessary maintenance will be recorded.

Waste Export

All waste is dispatched from the Site in suitably enclosed or sheeted vehicles to authorised facilities in accordance with the Duty of Care and Waste Transfer Note procedure to ensure dusty emissions are not discarded beyond the boundary of the Site.

Material rejected from the Site is issued with a record stating why, when and from which contract the waste was provided. This record is held on Site for NRW to inspect. Material will be rejected if it appears to comprise small, fine and ‘dusty’ wastes (for example fine sawdust or non-bound cement). These materials will have the potential to create dust issues when stored or processed at the site.

Dust Management

The Site Manager and Supervisor will oversee the implementation of this DMP and ensure that the methods detailed within provide effective emission mitigation.

Where the responsible individual is unavailable to supervise in the implementation of dust suppression measures, a suitably experienced Site operative will be allocated responsibility.

If dust emissions continue to be observed following the use of the dust suppression measures outlined, this DMP will be reviewed and additional measures such as fixed suppression systems considered.

Amendments of the DMP to reflect any potential improvements will be made during the 12-monthly review process (also reviewed if complaints are received).

During the induction process, all staff members will be trained in the dust suppression and reduction measures outlined in this DMP. Refresher training will be provided in the scenario where additional measures have been introduced to ensure staff remain competent.

The DMP will be reviewed at least annually or following any adjustments in operations which have the potential to increase the level of exposure to surrounding sensitive receptors.

A housekeeping/checklist is to be used across the site and is included as part of the EMS.

Mobile dust cannons will be hired at short notice if required to increase the moisture level within the waste, the first action will be to use the onsite sprays and hoses to wet the surface of the material. If this fails and dust is still noted, the cannon will be used. A cover will then be placed across the stockpile to ensure that the moisture holds within the pile and doesn't simply evaporate off.

Sources and Control of Dust Emissions

Detailed below are sources of dust emissions associated with all the operations and activities at the Site:

- Vehicles entering and/or leaving the Site with mud on wheels, and tracking dust on to or off the Site;
- Debris falling off lorries which arrive uncovered;
- Vehicles and plant moving around the Site;
- Road vehicles tipping waste;
- Site surfaces (i.e. the ground, plant and equipment);
- Loading wastes on to vehicles for removal and loading the material into the treatment plant;
- Plant operation and waste processing;
- Defective plant;
- Exposed stockpiles of inert materials.

Table 6 details the measures to be used at the Site for each of the sources outlined above to break the source-pathway-receptor routes.

Preventative and remedial measures to initiate on the Site to alleviate potential fugitive emissions are tabulated in **Table 7** below. Visual monitoring for off-site emissions will be used to both escalate the measures required and to de-escalate them when the emissions are back under control.

Table 6 Source-Pathway-Receptor Route

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted through mitigation
Mud	Tracking dust on wheels and vehicles. Mud dropping off wheels/vehicles when dry	Neighbouring units within the Industrial Estate	Visual build-up and soiling of dust and particulates, also consequent resuspension into the air column	• The external yard comprises engineered concrete surface. Vehicles will not be required to drive over any unpaved areas. • Inspection of vehicles and, where required, removal of any mud from the wheels etc prior to exiting the Site. • In the unlikely event that mud or dust is identified as an ongoing issue a road sweeper can be provided by a nearby supplier.
Debris	Falling off lorries	Neighbouring units within the Industrial Estate	Visual build-up and soiling of dust and particulates, also consequent resuspension into the air column	• Waste loads will be delivered to the Site in contained waste vehicles or sheeted vehicles. • Efficient and prompt unloading of vehicles into the designated area. • All areas subject to daily housekeeping. • Where debris is identified as an ongoing issue a road sweeper can be provided from a local road sweeper hire company.
Vehicles and plant moving	Atmospheric dispersion	Surrounding sensitive receptors and neighbouring units within the Industrial Estate	Airbourne particulates	• All areas, vehicles and plant machinery are subjected to daily housekeeping comprising of sweeping and wiping down and removal of loose particles. • 10mph speed limits imposed across the site. • Traffic management system in operation to limit quantity of vehicles.
Tipping and storage of wastes Site surfaces used for storage and movements	Atmospheric dispersion	Surrounding sensitive receptors and neighbouring units within the Industrial Estate	Visual soiling and dispersion of airborne particulates.	• Site bounded by fencing and the buildings acts as a barrier. • Minimise source strength by means of low drop heights. For storage piles, dampening down of material when there are prolonged periods of no precipitation coinciding with wind strength (and direction if relevant) that is likely to result in off-site emission releases (7 days without rainfall). This will be proactively undertaken before this period if the loads are identified during the inspection process as fine in particle size. The on-site water tanks will be used for this. • Dampening down of the Site surface if dust shows signs of migrating off site. • All plant is inspected prior to and after use for dust and debris build-up. • Plant is cleaned down after use to prevent the accumulation of dust and loose material.

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted through mitigation
				• All plant used on Site is maintained and serviced in accordance with manufacturers' guidelines and service agreements. • Avoid banging of tailgates when tipping (if applicable).
Loading Vehicles	Atmospheric dispersion	Surrounding sensitive receptors and neighbouring units within the Industrial Estate	Airbourne particulates	• Minimise drop heights when loading vehicles for export from site. • Ensure that every vehicle has the sheet in place and open, before leaving the site.
Plant operation and waste processing	Atmospheric dispersion	Neighbouring units within the Industrial Estate	Airborne particulates	• When in operation a trained member of staff will be maintaining observations surrounding any dust creation. • All treatment plant are fitted with abatement systems and to be used when, in the unlikely situation, dust levels could be impacting outside the boundary of the site. • Additional water sprays can be used as an extra to the in-built abatement systems. • When not in use, the plant will be shut off. • Plant will be limited to only be used in the permitted working hours.
Defective Plant	Atmospheric dispersion	Neighbouring units within the Industrial Estate	Airborne particulates	• All plant used on Site is maintained and serviced in accordance with manufacturers' guidelines and service agreements. • If defective, the plant is not to be used until replaced or fixed.
Exposed stockpiles	Atmospheric dispersion	Surrounding sensitive receptors and neighbouring units within the Industrial Estate	Airbourne particulates	• Ensure stockpiles are at least 1m below the bay walls if applicable. • Sufficient water sprays are available on site to dampen down if required. • Have covers available and ready should wind whipping become an issue and dust is created.

Table 7 Measures used on site to identify and then to control Dust/Particulates emissions

Measure	Description / Effect	Overall consideration and implementation
Routine measures in place each day		
Site layout in relation to receptors	Site is covered with an impermeable concrete surface. The site has been designed with the neighbours in mind and sympathetically laid out.	The off-loading, bulking up, storage and loading of wastes within designated area and the enclosed aspect of the trucks will help to minimise any fugitive emissions. The operations deemed to be more likely to produce dust are located the furthest point away from the most sensitive receptors.
Site speed limit, 'no idling' policy and minimisation of vehicle movements on site	Reducing vehicle movements and idling should reduce emissions from vehicles. Enforcement of a speed limit may reduce re-suspension of particulates by vehicle wheels and limit revving of engines.	A site speed limit of 10mph will be enforced. Vehicle engines will be switched off when not in use, to minimise any idling.
Minimising drop heights for waste.	Minimising the height at which waste is handled should reduce the airborne generation of debris, dust/particulates and reduce the level of nuisance.	As stated above, vehicle drops heights will be minimised.
Checking meteorological data at the beginning of each working day	Should the weather forecast indicate that high winds greater than 40 mph could occur (continuous not gusts), on-Site sweeping would be implemented at the beginning of the working day if the conditions are not wet or damp. A water bowser and hose will be used if the conditions are dry (7 days without rainfall) or if dust movement is noticed to have potential to migrate off site. This will prevent the presence of dust and reduce the likelihood of dispersal.	As a remedial measure to prevent the dispersal of any dust and loose material, checking the weather forecast is an easy method of proactively implementing dust suppressions methods if required. Having an active knowledge of wind direction can also impact the daily operation of the site. If high wind strength is forecast then the site management may make the decision not to load out material that day, or until the wind has decreased in strength. Baling is unlikely to be impacted as it is within a building.

Measure	Description / Effect	Overall consideration and implementation
Visual Monitoring	Visual inspections are made to identify if emissions extend beyond the Site boundary at locations shown on the site plan below.	This will be used as a trigger for the implementation of further preventative measures that are identified below. The trigger used will be visual confirmation that dust is clearly leaving the permitted boundary resultant from any of the site processes identified above.
Measures initiated* when visible emissions are noted during monitoring		
***Not all measures may be required to be implemented to control emissions. Depending on the weather conditions/emission level, they could be done in combination or isolation. They will be implemented progressively with the worsening emissions noted through monitoring.**		
Use of fully enclosed or sheeted vehicles to deliver wastes	Prevents the escape of debris, dust and particulates from vehicles as they travel.	Waste loads will be either be fully enclosed or delivered in sheeted vehicles to avoid dispersion of emissions.
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.	Waste material will not be stockpiled over long periods of time prior to transfer to relevant recycling or waste facilities. Material is stored in line with timescales outlined in the FPMP. If dust is noted to be an issue that other measures cannot resolve, the stockpile heights and therefore volumes will be decreased to reduce the surface area subject to wind exposure.
On-site sweeping	Sweeping is effective in managing larger debris, dust and particulates but may also cause the mobilisation of smaller particles, especially in dry conditions. 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.	Sweeping will form part of the general, daily routine of the Site to minimise the build-up of loose material and litter, thus the generation of potential dust and to maintain dust and litter free surfaces across the Site. Road sweeping will be activated when the sweeping activities cause a potential issue on its own during dry weather conditions.

Measure	Description / Effect	Overall consideration and implementation
Hosing of vehicles on exit	May remove some dirt, dust, and particulates from the lower parts of vehicles although unlikely to be necessary due to the low amount of tracking on hardstanding required.	As a preventative measure to reduce the deposition of dust and loose material off site.
Water suppression with hoses/sprays on site and within plant	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. The initiation of in-plant suppression can be used to prevent the emissions at source.	Will be predominantly implemented during dry (7 days without rain) and dusty (if high wind strength conditions link to dry spells) conditions and for dampening down vehicles. When dust is seen (via visual checks) to be leaving the site boundary the internal suppression system of the plant will be switched on to instantly reduce the creation of wind-blown material. This measure will be the first mitigation for dust noted when the plant is operational.
Water suppression with bowser	Using bowsers is a quick method of damping down large areas of the site with large water jets.	This will be implemented for the dampening down of larger areas, should dust be released and pose a threat of leaving the permit boundary. This will act as a trigger for dampening down the Site surfaces.
Measures to be initiated if all the above fail to control emissions leaving site		
Ceasing operations	During periods of continued emissions when the above-mentioned controls have been ineffective (identified through follow-up visual monitoring), the deposit of waste could be stopped along with all treatment processes.	During periods of elevated/prolonged emissions, this could be due to high wind speeds or when there has been prolonged dry weather, the deposit of 'dusty' wastes within the waste transfer station should still ensure that emissions are suitably controlled and minimised. If all abatement measures have failed to control emissions, the Site Manager will assess the situation and if deemed serious enough, stop all mechanical treatment operations. This would be to focus on, firstly stopping the issue and secondly, planning on reducing emissions if the above measures are not effective. This will also occur if high levels of substantiated complaints are received and confirmed by NRW officers.

Dust Monitoring

Dust monitoring at the Site boundary will be carried out as part of the routine daily Site inspections with any relevant observations recorded and retained on-Site. Should dust be deemed (by the site manager) to have the potential to cause significant (CICS definition) impacts outside of the site boundary, treatment operations will cease until emissions are controlled.

Dust monitoring at the locations identified below will be undertaken by the supervisor at regular intervals throughout the day when processing is occurring. The monitoring locations will be checked 15 minutes after processing of waste is initiated and then once per hour thereafter until the processing has ceased. The check sheet below will be used as a control log for all dust monitoring.

Continuous monitoring will be undertaken by the plant operator throughout the processing of the material. If at any time the dust being produced increases for any reason, the site manager will be informed and the relevant actioned initiated to reduce the impacts and creation of dust.

Training will be undertaken by the site supervisor and training records will be maintained in the employee folders.

Meteorological data regarding wind speed and direction is checked using the Windfinder data at the beginning of the treatment working day. Should the forecast indicate that wind speed would be greater than the levels identified above, immediate on-Site sweeping would be enforced if the conditions are not wet or damp. A water bowser and hose will be used to dampen down Site surfaces and stockpiles and/or materials comprising of small particle size. It is important to ascertain the wind speed and direction as emissions from site are likely to be worse in weather conditions that are dry and windy.

All plant will be inspected before/after use and cleaned after use, as appropriate, to prevent the accumulation of dust and loose materials.

Informal dust monitoring comprising of operational staff remaining vigilant for observable dust and particulate will be carried out during the operational process. Where dust emissions are identified, operations will temporarily cease, and the Site boundary will be examined to ensure emissions are not dissipating towards sensitive receptors. Dampening down of the source of any emissions will be undertaken before operational processes resume.

If abatement measures are unable to control the dispersal of emissions and have not succeeded in reducing them, the Site will stop all site activities to focus on suppression, before informing NRW and neighbouring businesses, residents and sensitive receptors identified previously via telephone (note that there is a contact list held in the Site office that is updated regularly).

Due to the levels of abatement measures to be integrated on the Site as detailed and given that the waste types received on-Site are not inherently dusty or of small particle size, the likelihood of emissions impacting on the identified sensitive receptors is considered low.

Therefore, no other forms of additional dust monitoring are proposed for the Site.

In the unlikely event that dust emissions are identified as an issue, the operator will review the mitigation measures and monitoring techniques detailed in this DMP to reduce exposure levels and inhibit emissions dispersing from the Site. In this scenario, quantitative techniques will be considered as a monitoring process.

Once mitigation measures have been initiated, visual monitoring will be undertaken once more by the site manager immediately after treatment processes restart. The monitoring will be carried out for 10 minutes at each monitoring point to ensure that no dust can be seen to be created and therefore migrating off site.

Records (to include photographs/videos) will be maintained by the site management post-dust recording as evidence that the mitigation measures have worked to allow operations to re-commence.

The company complaints procedure will be followed.

Week commencing ??/??/??	Dust emission identified								
	Assessor	**Time**	**Weather**	**Activities being undertaken on site (loading/unloading, screening)**	**Monitoring Location 1 (Y/N)**	**Monitoring Location 2 (Y/N)**	**Monitoring Location 3 (Y/N)**	**Monitoring Location 4 (Y/N)**	**Monitoring Location 5 (Y/N)**
Sunday									
Monday									
Tuesday									
Wednesday									
Thursday									
Friday									
Saturday									

Monitoring Location	Day Noted	Comments (Severity etc)	Mitigated measures required	Implemented and actioned	Emissions controlled?
1					
2					
3					
4					
5					
Management sign-off:	Date:				

Reporting and Complaints

Enviroventure Waste Solutions Ltd operate and maintain an EMS. Any complaints received concerning emissions at the Site will be dealt with in accordance with the company`s complaints procedure.

Any complaints received at the Site, e.g. dust, will be reported to the Site Manager who is responsible for the Site management or supervisor, e.g. in the absence of the Site Manager due to illness or annual leave etc.

The complaints will be escalated to the director if 3 are received within 24 hours.

The following actions will be taken on receipt of an external complaint:

- The responsible person receiving the complaint at the Site will immediately record the key details, initiating the investigation process. Details will be entered on the Complaint Report Form (see below). The form sets out the key information that should be recorded at this time to facilitate further suitable investigation.
- The Site Manager will be informed of the complaint as soon as possible, including the location, time and date of the complaint being lodged.

COMPLAINT RECORD FORM

Who made the complaint?	
Name:	
Address:	
Phone No:	
Date and time they made the complaint	
What caused it?	
Was anyone else aware of this? If so who?	
What was the source of the problem, what went wrong? If source is unknown, has the site manager been informed?	
Complaint be escalated to director?	
What have you done to make sure it won't happen again?	
Was there any significant pollution?	
If there was then you must notify Natural Resources Wales (open 24hours/day) **Have you done so?** **You must also notify NRW via email or letter.**	**Yes/No/not applicable** **Time:** **Date:** **Incident number:**
Please print name and sign:	

In recognising that some dust complaints can be transient and short-lived, timely notification of complaints directly from the complainant or NRW is imperative to allow for appropriate investigation. If the complaint occurs more than 12 hours before notification is provided to the Operator, it may not be possible to substantiate the complaint or pinpoint the cause. Enviroventure Waste Solutions Ltd will, however, contact the complainant where possible and review any operations at the time which had the potential to cause the complaint. Enviroventure Waste Solutions Ltd will complete and record a comprehensive complaint investigation. For complaints received within 12 hours of the incident the following actions will be undertaken:

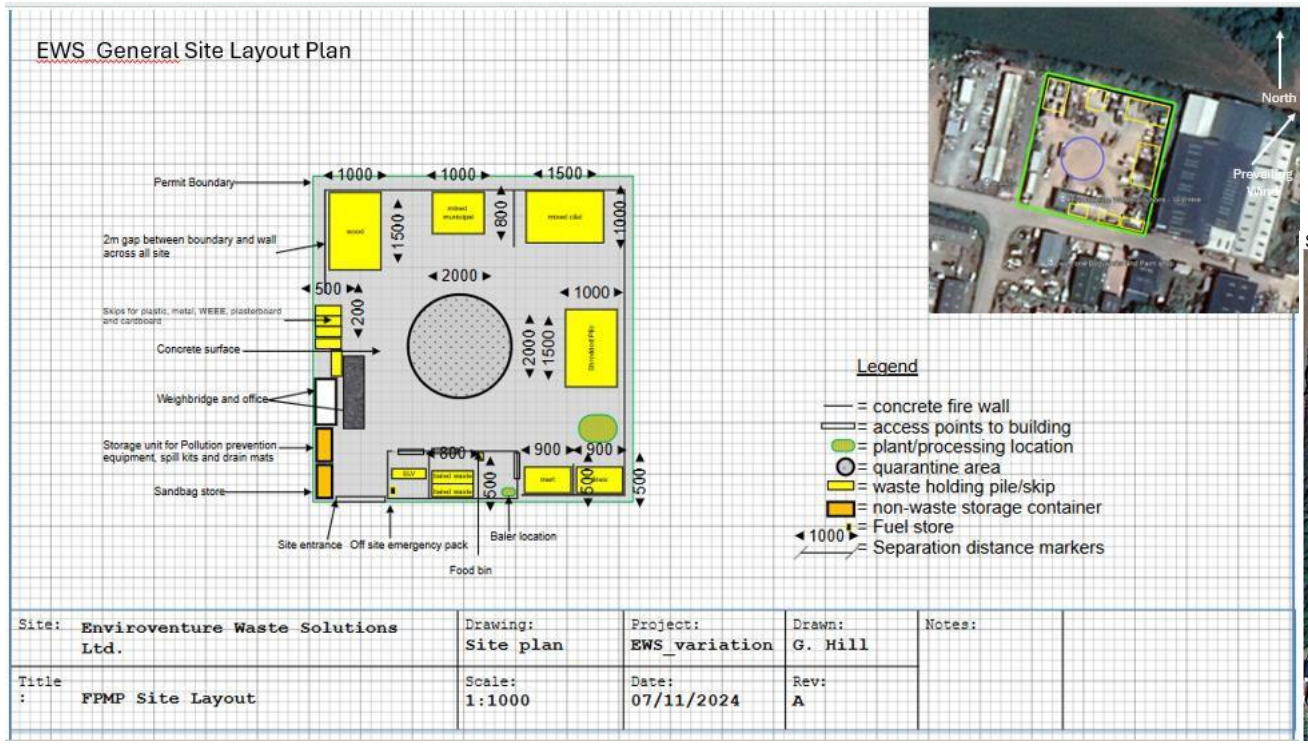
- The Site Manager will visit the complaint location as soon as possible, with the aim of undertaking monitoring within 2 hours if this is possible within the working day. The Site Manager will subjectively determine the presence or absence of the cause of the complaint, e.g. visible dust presence. Opportunities to meet the complainant to discuss the matter directly will be pursued, wherever possible.
- If the cause of complaint, is present, the key 'FIDOR' criteria will be assessed at the complaint location, as follows:
- Frequency – is the cause of the complaint, e.g. dust, intermittent or persistent; is there a history of complaints at this location?
- Intensity – is the cause of complaint faint, moderate, strong, or very strong?
- Duration – how long is the cause of complaint present at this location?
- Offensiveness – provide a description of the cause of complaint; is it high, moderate, or low offensiveness?
- Receptor sensitivity - is the cause of complaint present at a remote or highly sensitive location; is it localised or widespread?

The Site Manager will subsequently undertake the following further assessment process:

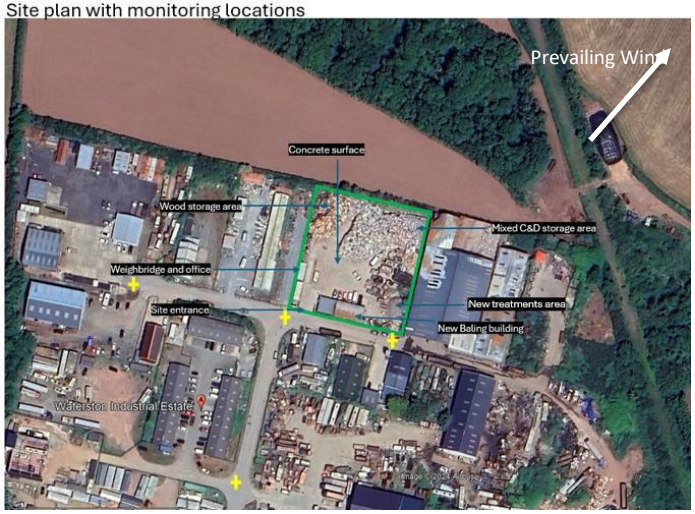
- Review of the operations at the Site prior to and at the time of the complaint;
- Review of the environmental control systems prior to and at the time of the complaint;
- Review of the meteorological conditions (wind speed, wind direction, rainfall, atmospheric pressure) prior to and at the time of the complaint – to establish whether a pathway can be established between the Site and the complainant;
- Review of the previous complaint history at the location identified.

Where a significant complaint is substantiated by the Site Manager, the Operator will contact NRW. A maximum target response period of 24 hours from complaint receipt will be used. If the necessary contact details are available and direct feedback has been requested the Operator will also contact the complainant directly to discuss the issue, the findings of the subsequent investigation, and any actions arising.

On site processes and the DMP will be reviewed and updated were required.



Site plan with monitoring locations



Area	Frequency	Work To Be Undertaken
Site Surfaces	Daily	Dampen down and sweep (avoid dry sweeping)
Plant and Machinery	Each use	Maintain and clean
Material Piles	Daily	Dampen down or cover
Perimeter Netting	Quarterly (or as required)	Repair if required
Buildup of fine material around plant	Whenever in use	Sweep and clear away
Check Water Levels in Suppression Tanks	Weekly	Top up if required

Daily Visual Monitoring Checklist

Monitoring Location Number	Dust Noticed (Y/N)	Action Required (Y/N)	Reference Point in Table 7
1			
2			
3			
4			