Environmental Management System
Dust and Emissions Management Plan

Land at Salamons Way, Rainham, RM13 9UL

Reference: MGR-EMS-OP-02 Version 1

July 2024

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DOCUMENT CONTROL SHEET

Client	May Glass Recycling Limited
Project	Land at Salamons Way, Rainham, RM13 9UL
Document Title	Dust and Emissions Management Plan
Document Reference	MGR-EMS-OP-02

	Prepared by
DATE	
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1 INTRODUCTION

1.1 This Dust and Emissions Management Plan (DEMP) has been prepared as part of the Environmental Management system for May Glass Recycling Limited (MGR).

1.2 The permitted site will cover two properties at Salamons Way, Rainham, RM13 9UL, centred at NGR TQ51335 81469. A site location plan is provided on Drawing No. MGR-SW-EP-01. The Site Layout is provided on Drawing No. MGR-SW-LAY-01.

1.3 The operator has conducted operations at 5 Salamons Way, Rainham, RM13 9UL in accordance with the S2 and T4 exemptions. This site will be the main operational base with the site office.

1.4 MGR has operated from No. 10 Salamons Way since April 2024 under exemptions S2 and T4. This land supports the existing operations by providing storage capacity and treatment. The sites are opposite each other on Salamons Way.

1.5 The operator handles a specific waste stream and for this reason a bespoke permit is being applied for.

The Operator

1.6 May Glass Recycling (MGR) is a family run business with over 25 years experience in glass recycling. The company used to specialise in flat glass i.e. windscreens, double glazing and aquarium glass, but have extended this to include all glass.

1.7 As part of their involvement with double glazing companies, MGR will also collect and store UPVC.

1.8 MGR provide a collection service, providing skips or larger containers for developers to source segregate waste glass or UPVC.

1.9 The glass collected by MGR is transferred to other sites for recycling. The clean plate glass is treated on site to produce cullet. The UPVC is transferred to a specialist facility for recycling.

1.10 The company has achieved ISO9001 and 14001 for quality and environmental management systems.

Site Location

1.11 The site is within an established industrial estate. Other commercial occupants include concrete batching, tyre replacement, vehicle repair, garages and builders yards.

1.12 The site is located off Salamons Way, which joins Ferry Lane.

1.13 The site is in the London Borough of Havering. The entire borough was declared an Air Quality Management Area in 2006. The pollutants declared are Nitrogen Dioxide and Particulate Matter (PM_{10}). The source of these pollutants is road transport.

1.14 With reference to UK Air[1], there are no nearby Automatic Urban and Rural monitoring stations. The nearest Locally Managed Automatic monitoring station is Havering – Rainham (Havering). This is located at Upminster Road South junction with A1306, approximately 2km north east of the site.

Scope

1.14 These Operational Procedures cover:

- Physical Treatment of non-hazardous waste
- Storage and Transfer of non-hazardous waste

1.15 The site will primarily be used to receive waste glass and UPVC for transfer. Clean plate glass will be used to produce cullet.

Management System

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

a) Documents: Procedures to set out how to undertake operations and checking for any issues.

b) Forms on which to record information and provide evidence of the system functioning properly.

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

1.18 All documents will be kept in the site office at 5 Salamons Way.

[1] [1] https://uk-air.defra.gov.uk/interactive-map

2 OPERATIONS

Waste Deliveries to Site

2.1 At the time of booking, the customer will be advised of the wastes that are permitted to be deposited at this site. MGR provide a specific service for handling waste glass and UPVC.

2.2 MGR provides containers and skips to construction projects or manufacturers, to enable them to source separate glass and UPVC.

2.3 The drivers collecting the waste will check the contents of any container at the point of collection. This will ensure that only the specified waste is transferred to the site.

2.4 All collection vehicles meet Euro 6 emission rating.

2.5 For third parties delivering waste, the customer will be informed about the wastes that can be accepted. The operator does not accept mixed loads of construction waste.

2.6 Loads will be sheeted during transportation.

On Site Waste Acceptance

2.7 For MGR collected waste, all waste delivery vehicles will first be weighed at the existing site.

2.8 For third party deliveries, the operator will check the waste carrier details and check the contents of the load.

2.9 The driver will provide the necessary paperwork to the site office (Waste Transfer Notes).

2.10 The driver will then be instructed to unload in the appropriate site.

2.11 The vehicle will be unsheeted when ready to discharge.

Overview of Waste Processing and Dust Controls

2.12 The site layout is provided in Drawing No. MGR-SW-LAY-01.

2.13 The operator will provide storage bays using concrete blocks which can be interchangeable to store different types of glass. The following types of glass will be accepted:

- Clean Plate / Flat Glass
- Double glazing
- Bottles
- Laminated
- MRF Glass

2.14 The bays could also be used for providing additional storage capacity for mixed plate (tinted, sealed, mirrored and wired glass) and windscreens.

2.15 A separate bay or containers will be used for UPVC. This could be off-cuts from UPVC manufacturers and glaziers, or waste UPVC from development projects.

2.16 The site layout has been designed to enable the storage bays to be positioned around the edge of the site. This allows the rear concrete wall to provide both a containment wall and site boundary barrier.

2.17 The flat glass will be used to produce cullet. This will be in accordance with the WRAP protocol.[2] The certified process will involve treating the waste glass by crushing, handpicking any contaminants and magnetic screening to remove metal.

2.18 The metal will be stored in a bay.

Overview of Waste Processing and Dust Controls

2.19 The site layout is shown on Drawing No. MGR-SW-LAY-01. A process flow diagram is provided in Figure 1. The majority of the waste to be accepted at the site will be waste glass, with some UPVC. The waste codes set out in Table 1 provide the main list of waste to be accepted and its destination on site.

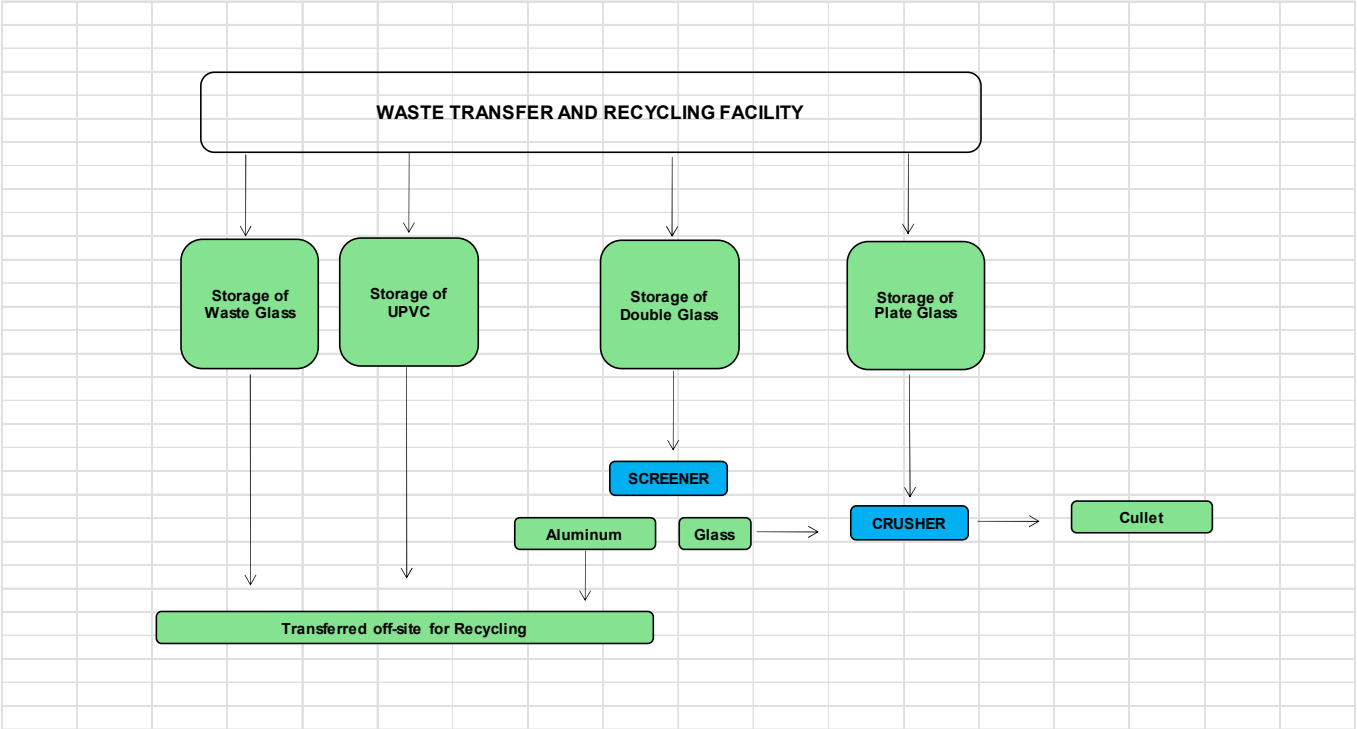
[2] Quality Protocol. Flat Glass, the quality protocol for the production of processed cullet from waste flat glass.

Table 1 –Wastes Typically Accepted at the Site

EWC Code	Description	Comments	Risk	Mitigation
150107	Glass packaging	Clean Plate glass to be crushed. Double glass to be screened to separate aluminium. All other glass will be stored and transferred.	Medium risk associated with loading crusher. Low – Medium risk associated with separation (removal of aluminium strips) Low - Medium risk associated with storage	Damping material prior to loading crusher. Crusher has inbuilt suppression. Crusher will be used periodically, allowing the operator to check weather conditions and adjust programme accordingly. Screener used periodically and can be adjusted depending on weather conditions Storage bays and controlled storage limits.
160120	Glass			
170202	Glass			
191205	Glass			
191212	Mixed waste containing Glass			
200102	Glass			
170203	UPVC	Stored	Low risk. UPVC stored as whole units. No treatment	Standard storage procedures with suppression as set out.
170904	UPVC with glass and metal	Glass removed and stored		
191204	UPVC	Stored		
200139	UPVC	Stored		

The full dust control measures are set out in Section 3 and Tables 8 and 9.

Figure 1 – Process Flow Diagram



Waste Storage and Quantities

2.20 The site will store no more than 2,000 tonnes of waste at any one time (1,000 tonnes on each site). The annual throughput for the site will be 80,000 tonnes.

2.21 The process capacity for crusher is 7 tonnes per hour.

2.22 No waste will be stored higher than 3m.

2.23 The storage limits are set out in Tables 2A and 2B.

Table 2A – Waste Storage (5 Salamons Way)

Waste Type	Storage Area	Max. Pile Height	Maximum Storage Volume
Mixed Plate	10m x 7m 70m^2	3m	150m^3
Clean Plate	10m x 7m 70m^2	3m	150m^3
Windscreens	10m x 7m 70m^2	3m	150m^3
MRF Glass	9m x 5m 45m^2	3m	100m^3
Cullet	6m x 7m 45m^2	3m	100m^3

Note: volume not based on uniform dimensions. Bays will be interchangeable depending on market conditions. The storage limits will be the same.

Table 2B – Waste Storage (10 Salamons Way)

Waste Type	Storage Area	Max. Pile Height	Maximum Storage Volume
Double Glass	4m x 5m 20m^2	3m	40m^3
Double Glass	4m x 5m 20m^2	3m	40m^3
Metal	4m x 5m 20m^2	3m	40m^3
Glass	6m x7m 42m^2	3m	80m^3
Glass	6m x7m 42m^2	3m	80m^3
Glass	6m x7m 42m^2	3m	80m^3
UPVC*	6m x 2.5m 15m^2	2.1m	31.5m^3
UPVC*	6m x 2.5m 15m^2	2.1m	31.5m^3

Note: volume not based on uniform dimensions. Bays will be interchangeable depending on market conditions. The storage limits will be the same.

*waste stored in containers.

2.24 The storage bays will be checked daily to ensure that the capacity is maintained. Once any bay is 75% full, arrangements will be made to transfer the glass. For the clean plate glass, the bays will be checked and when the bay is 50% full, the glass will be crushed.

2.25 The operational hours for the site are:

Monday to Friday 0700-18.00

Saturday 07.00-14.00

No operations on Sunday or Bank Holidays

Mobile Plant and Equipment

2.26 The site will use the following mobile plant and equipment:

- Crusher x1
- Screener x1
- Material Handler x2
- Loading Shovel x2
- Forklift x1

Nitrogen Dioxide gas is a by-product of internal combustion engines and the site uses several items of plant with internal combustion engines. Table 3 lists the type, mobile and emission ratings for the mobile plant and equipment used on site:

Table 3 – List of Mobile Plant

Description	Make	Model	Emission Rating
Material Handler	JCB	JS20MH	EU Stage IIIB
Loading Shovel	CAT	918M	EU Stage IV
Forklift	To be confirmed	To be confirmed	

2.27 The company has a policy of replacing old machinery with modern machinery.

2.28 The crusher and screener will be operated in a fixed position as shown on the layout plan.

2.29 An anti-idling policy will be in place to ensure that engines are switched off when not in use.

2.30 All road and mobile plant will be complaint with Euro 6 emissions standard.

2.31 The site has a Planned Preventative Maintenance Schedule (PPMS) for each item of machinery and all road vehicles.

3 DUST AND PARTICULATE MANAGEMENT

Responsibility for Implementation of the DEMP

3.1 The Technically Competent Manager (TCM) has responsibility for ensuring these procedures are adhered to which includes communication with staff and contractors, and the provision of adequate training. The TCM is responsible for updating and re-issuing these procedures as necessary and ensuring all staff are trained in new procedures. The TCM will be the main point of contact for ensuring implementation of this plan. In their absence, the Site Supervisor will be responsible for implementation.

3.2 All staff will be trained in these procedures. The TCM is responsible for delivering training and maintaining records. Training is reviewed on an annual basis. The site office has a dedicated training room to deliver all training and tool box talks.

3.3 All staff will be trained to a standard which enables them to perform the responsibilities, and this will include understanding the DEMP (under Amenity Management).

3.4 A record of staff training will be kept for each staff member which includes inductions to new processes and procedures as needed. The following training matrix will be adopted to guide training needs.

Table 4 – Training Matrix

Training Needs for Each Role	TCM / Site Manager	Plant Operatives	Site Operatives	Administration Staff	Drivers
Induction	X	X	X	X	X
Accidents and Emergency	X	X	X	X	X
Fire Action Plan	X	X	X	X	X
Amenity Management	X	X	X	X	
Plant Training	X	X	X		
Vehicle marshalling	X	X	X		
Waste handling	x	X	X		
Environmental Permitting	X	X	X	X	
Complaints and Incidents	X	X	X	X	
Spillage Procedure	X	X	X		X

3.5 For amenity management, the training will include:

- Identifying conditions that may give rise to dust emissions.
- Implementing dust suppression
- Reporting dust emissions to site management

- Sheeting vehicles
- Speed limits on site
- Addition controls for Met Office Red Alerts
- Handing complaints
- Reporting faults with any equipment that may increase risk of emissions.

3.6 All staff will receive induction training within 1 month of the permit being issued. Follow up training will take place annually, or sooner if DEMP has been updated.

3.7 A record of staff training will be kept for each staff member which includes inductions to new processes and procedures as needed. This will be recorded on form.

3.8 For all visitors or contractors, a site safety briefing will be conducted in the main office. This will include H&S and an overview of amenity management. For contractors that may be employed to carry out repairs or maintenance, they must notify the site management of any activity that may cause dust emissions and ensure that mitigation measures are in place. Visitors and contractors can view the DEMP in the site office if required.

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

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

3.11 All documents supporting the EMS and DEMP will be kept in the main office.

Sources and Control of Fugitive Dust/Particulate Emissions

3.12 The following are potential sources of dust emissions:

- Vehicles entering and/or leaving the site with debris on their wheels
- Waste unloading (Unloading Area)
- Loading process plant
- Crushing
- Screening
- Moving materials
- Particulate emissions from the exhaust of vehicles and plant on site.

3.13 It is also important to identify other potential sources of dust emissions in the locality. There are several construction projects in the local area, that are all potential sources of dust. These are listed in Table 5.

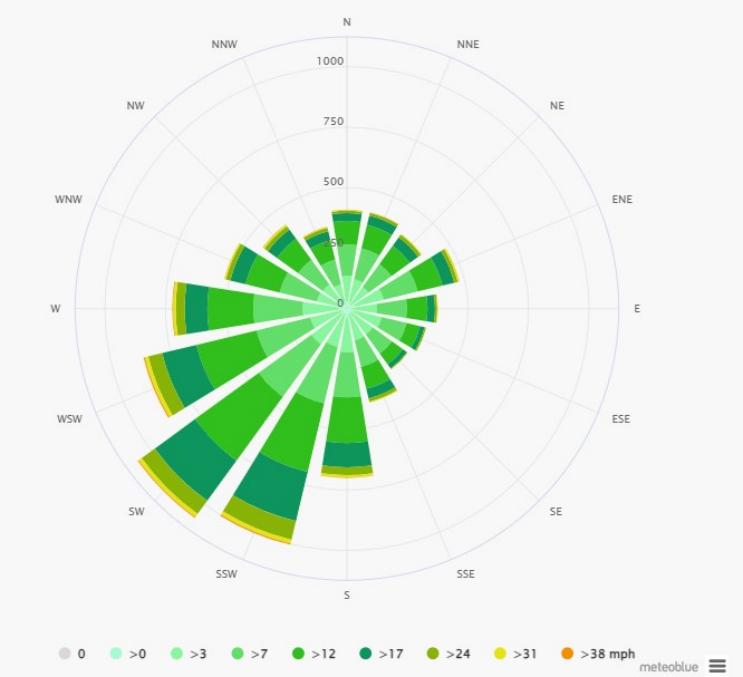
Table 5 - Sources of Dust and/or other Emissions

Company	Address	Type of Business	Distance from site boundary (m)
Construction site	1-3 Salamons Way	Construction	15m South East
RMS	20 Salamons Ways, RM13 9UL	Concrete batching and aggregate storage.	80m West
Adler & Allan	24 Salamons Ways, RM13 9UL	Waste Management	110m south west
Discount builders	2 Salamons Ways, RM13 9UL	Builders Merchant with aggregate storage	100m East

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

3.15 Windrose data has been obtained for Rainham.

Figure 2 - Wind Rose Data[3]



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

3.17 Figure 3 shows the site and broad location of the main receptors within 1km. Table 6 provides a description of those receptors and the distance and direction from the site. The distance has been measured from the permit boundary, at the closest point.

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

[3] https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/isle-of-sheppey_united-kingdom_2638038

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

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

Figure 3 - Site Setting and Receptors (The site is shown with a green boundary). Blue shows 1km radius fro

Table 6 – Receptors

Receptor	Legend	Type	Sensitivity	Distance and Direction from Permitted site
Ferry Lane Industrial Estate	A	Industry	Low	Surrounding
Denver Industrial Estate	B	Industry	Low	210m North
Ferry Lane Industrial Estate	C	Industry	Low	140m South
Fairview Industrial Park	D	Industry	Low	215m West
Riverside Sewage Treatment Works	E	Waste Water Treatment Works	Low	455m North
Heriot Road	F	Residential	High	950m North
Capstan Drive	G	Residential	High	970m North East
Inner Thames Marsh SSSI	H	Ecological	High	100m South East
River Thames	I	Surface Water	High	465m South West
River Ingerbourne	J	Surface Water	High	140m West
A13	K	Road	Low	15m North

Dust Control Measures

3.20 The site has been designed to prevent dust emissions being created and leaving the site boundary.

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

- Vehicles to be sheeted on arrival and before leaving the site.
- Unloading will be overseen by a banksman to prevent vehicles tracking through any deposited waste.
- Low likelihood of tracking due to nature of the waste.
- Vehicles leaving the site will be checked and a hose and brush will be used to clean the wheels. This will be available on both sites.
- Both sites are concreted.
- Storage of waste within concrete bay walls and profile boards providing 3.5m barrier height. The waste will be stored with a 0.5m freeboard against the rear and side walls.
- Speed restriction of 5mph on site limit dust arising from waste vehicles and mobile plant.
- As part of the site daily checks, the Site Manager will check the entire site for evidence of any debris and arrange cleaning as required. The site will be cleaned in accordance with the Cleaning Schedule.
- Use of bowser and trailer to dampen working yard.
- Mobile plant will be cleaned, with a full clean at the end of each week.
- Dust suppression fitted to conveyor on crushing plant.
- Dust Suppression sprays to be installed around the site to dampen stockpiles during drier weather conditions.
- Weather forecast review. The TCM will check the weekly forecast at the start of each working week. If the Met Office issues a weather warning for high wind, the TCM will arrange for the crushing operations to cease during that time. Waste manoeuvring will also be curtailed. If the forecast is for moderate wind, the TCM will decide on the day to determine what activities can take place.
- If the Met Office issue a weather warning for drought conditions, the TCM will arrange for additional water storage capacity using IBCs. Each IBC can hold 1,000 litres of water.
- Drop heights will be reduced to mininise dust emissions.
- Stockpiles will be dampened.

- Crushing and Screening will only take place periodically. This allows the TCM to delay operations in the event of poor weather conditions (dry and windy).

Dust Suppression

3.22 Dust sprinklers will be installed around the storage bays. The position of each sprinkler is indicated on Drawing No. MGR-SW-LAY-01. The sprinklers will have a range of 13.5m, which is also shown on the plan. This shows that the storage bays will be covered by the sprinkler units.

3.23 During dry weather conditions, the sprinklers will be activated to dampen the stockpiles and to dampen any material whilst it is being unloaded or loaded.

3.24 The production of cullet involves a crushing unit which feeds into an enclosed picking station. The crushing unit will have its own spray bar fitted. The suppression will be activated whilst crushing (unless it is raining).

3.25 In addition, the operator has access to a trailer and bowser for spreading water on to the operational yard. This will be deployed to target any yard areas not reached by the dust sprinklers.

Stockpiled Wastes

3.26 With reference to Environment Agency guidance, the following steps have been taken into account through this DEMP to prevent material escaping from stockpiles.

- Dust Suppression will be used to dampen stockpiles.
- The site has been designed to minimise wind whip and to contain all material.
- There are defined storage limits which will be checked daily.
- Storage bays constructed using legio bricks or concrete A-frames. Most waste stored will be whole units with low likelihood of dust generation.
- The storage of cullet will be within concrete bay wall.
- Monitor weather conditions and cease treatment operations during windy conditions.
- For Met Office warnings for high wind, the TCM will not operate the crusher. Stockpiles will be dampened in preparation and arrangements made to reduce the height of stockpiles or remove stockpiles from the site.

3.27 The TCM will review the weather forecast at the start of each working week. This will provide an indication of the potential risk from dust generation and the mitigation measures required.

Control of Mud and Debris

3.28 The nature of the operations will not generate mud.

3.29 The waste glass and UPVC will be in a solid state.

3.30 The site will be concreted, which provides an easier surface to keep clean.

3.31 Unloading will be overseen by site staff to prevent vehicles tracking through deposited waste.

3.32 Before exiting the site, all vehicles will be stopped and visually inspected by trained staff to reduce the risk of any debris being tracked off-site.

3.33 The deposit of material on the access road or public highway will be treated as an emergency and will be cleared immediately by the operator using either a brush and shovel or vacuum tanker/road sweeper.

3.34 It is proposed to deploy a road sweeper on a weekly basis as a minimum to clean the entrance area and yards.

3.35 There have been no reported complaints associated with the operations on the existing site.

Routine Cleaning

3.36 The site will be cleaned daily. The cleanliness of the site will be checked as part of the daily site checks. This is recorded on the daily check form.

3.37 The cleaning schedule is provided in Table 7.

Table 7 – Cleaning Schedule

	Daily	Weekly	Annually
Full Site Check	✓		
Vehicle Wheels	✓		
Site Entrance	✓	✓	
Site Access	✓	✓	
Storage Bays – concreted	✓	✓	Full site Audit
Mobile plant, crusher, screener	✓	✓	

3.38 The TCM will nominate a site operative(s) to be responsible for carrying out these tasks. The TCM will follow up any complaints or incidents with a full inspection.

3.39 The TCM will be responsible for arranging the Road Sweeper on a weekly basis, or at an increased frequency if required.

Visual Dust Monitoring

3.40 The site management and site operatives will make visual inspections of dust emissions around the entire site and perimeter throughout the day. Additional monitoring may be carried out during times of dry/windy weather conditions or

should trained operatives observe significant levels of dust. The monitoring will be carried out at intervals while the site is operational, should it be observed that dust is being emitted from the site, notes will be made describing the amount, direction and source of the dust.

3.41 The visual daily checks will take place every 2 hours by the TCM or nominated person. The monitoring will be completed using the Daily Check Form, EMS-FR-01, provided in Appendix A. Any noticeable observations of dust generation will be reported to the TCM.

3.42 The TCM will review all feedback from the visual monitoring and take the necessary action to mitigate the issue and ensure it doesn't happen again. Depending on where and if dust is detected, site management and operatives will act immediately by either dousing the problematic area or using the broom and shovel to clean the access area.

3.43 As set out above, the TCM will obtain prior notifications from the Met Office in advance of problematic weather conditions including wind speed and direction, droughts etc. to see whether the dust suppression techniques need to be increased to reduce the likelihood of complaints.

3.44 Crushing will only take place approximately three times per week. The TCM will review the weather conditions and select the optimum conditions for a particular week for crushing. The crushing day could therefore vary from week to week and be determined using weather conditions. The same applies to screening.

3.45 Out of hours monitoring will not be regularly required as it is deemed that the processing and loading of the material is likely to give rise to the highest levels of dust emissions i.e. from use of the treatment plant. However, should it become apparent that dust emissions are generated out-of-hours, site management will decide on whether additional out of hours monitoring is required (based on predicted wind speeds, observed success of crusting agents etc.) or additional control measures are required.

3.46 Such control measures could include but not limited to; netting on top of boundary walls/fences, increase in height of walls/enclosure, reduction of stockpile size, cover stockpiles overnight.

3.47 The DEMP will be reviewed on an annual basis or sooner if requested by the EA. It will also be updated if the operator changes the operation. In addition, the DEMP will be updated with further dust suppression measures if the current measures prove to be ineffective. The combination of the site design, fixed mitigation such as concrete walls, operational measures such as managing stockpile heights, drop heights and activating dust suppression will be assessed during the first 12 months of operation.

3.48 In the event of complaints being received, the complaint procedure will be implemented using form EMS-FR-02 to record details and findings.

Weather conditions – Contingency Measures

3.49 The TCM and site management will check the forecast at the beginning of each week to check for the following weather conditions which could cause a potential on or off-site dust complaint:

- High winds >30mph
- Dust escaping beyond the site boundary
- Droughts or periods of hot weather exceeding 3 major dry days which could lead to water shortages, hosepipe bans and excessive dust.

3.50 This will also be used to check weather warnings for named storms.

3.51 During high winds the following actions will be implemented.

- There will be no treatment of any waste during conditions of high winds.
- Stockpiles will be reduced to prevent the material escaping beyond the site boundary.
- In the event of extreme winds, the site will deploy the above measures and may be forced to close operations until conditions have improved which will also include contacting the EA Local Officer.
- Following such an event, the site infrastructure will be checked for damage, with corrective repairs carried out as necessary.

3.52 Additional measures may be used when the prevailing wind is towards to the ecological designation (the Inner Thames Marsh SSSI). The SSSI is south east of the site, which is not downwind of the prevailing south westerly wind. During storm conditions which could release dust towards the direction of the SSSI, the TCM will cease treatment operations or implement further control measures. The SSSI is separated from the site by other businesses and there is no direct line of sight. The likelihood of dust emissions from site activities impacting the SSSI is low.

3.53 During drought conditions (warm, dry weather), the following actions will be implemented.

- In extreme cases such as a hosepipe ban or water shortage, the site will ensure there is additional water available i.e. tanks which can be used for filling the dust cannons to ensure suppression techniques can still function. Further cannons or bowsers may be hired in to cover the dry period.
- Where dust is becoming a major concern then the operator will stop processing the material and cover stockpiles using tarpaulin until conditions or dust suppression techniques are considered effective.

Operational Failure

3.54 The TCM will be contacted by staff in the event of any operational failure such as the breakdown of plant, suppression systems or equipment and will decide whether operations are to continue or be suspended prior to corrective action being taken. Serious operational failures, which result in the closure of the site, will be recorded in the site diary.

3.55 The operator has on-site mechanics available to assist with any breakdowns. There is workshop adjoining the site. The operator also has contacts with hire companies to assist with temporary machinery hire whilst plant is being repaired.

3.56 Tables 8 and 9 provide the risk assessment for dust and the remediation/control measures.

Table 8: Source-Pathway-Receptor Routes

Source	Pathway	Receptor	Type of impact	Control Measures
Unloading and processing waste	Tracking dust on wheels and vehicles	Local Roads	Visual soiling, also consequent resuspension as airborne particulates	Nature of the waste will minimise risk associated with tracking dust / debris on to the road network. All vehicles delivery and collecting waste will be sheeted. Speed restrictions on site (5mph). There is 100m of road before entering public highway. Bowser used to clean surfaces. A road sweeper will be deployed as necessary to clean the access road.
	Atmospheric dispersion	Nearby industrial premises (workers and pedestrians).	Visual soiling and airborne particulates	Vehicles will only be unsheeted when ready to discharge. The waste will be unloaded and treated in dedicated areas in the site. Drop heights will be kept to a minimum. Waste unloaded and stored in concrete bays. Waste to be stored with a 0.5m freeboard against the rear and side bay walls, to minimise windwhip.

Source	Pathway	Receptor	Type of impact	Control Measures
	Atmospheric dispersion	Residential properties	Visual soiling and airborne particulates	The nearest residential receptors are nearly 1km from the site. There is a very low risk associated with this potential impact.
	Atmospheric dispersion / surface water runoff	Designated Ecological Sites	Visual soiling, smothering, suspended solids in water.	The ecological designation is separated from the site by a large development site and other industrial occupants. There have been no reported complaints regarding the existing operational site. Crushing will take place in a bespoke plant, which transfers the crushed glass into an enclosed picking station before discharging the cullet into a storage bay. There will be 3.2m high concrete bays around the site for all waste storage. Dust is not associated with the waste glass or UPVC. Dust suppression will be used during dry weather conditions. Entire site is concreted with sealed drainage, preventing runoff. Reduce drop heights. Daily site checks to assess stockpile volumes. All staff trained to be vigilant for dust emissions. TCM to monitor weather forecast at the start of each week

Source	Pathway	Receptor	Type of impact	Control Measures
				to prepare as necessary. For Red Alerts for high wind, operations will not take place.
Debris	Falling off lorries	Local Roads	Visual soiling, and resuspension as airborne particulates	All vehicles delivery and collecting waste will be sheeted. Speed restrictions on site (5mph). There is 100m of road before public highway. A road sweeper will be deployed as necessary to clean the access road.
Vehicle exhaust emissions	Atmospheric dispersion	All	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength
Non road going machinery exhaust emissions	Atmospheric dispersion	Local Environment	Airborne particulates	Regulatory controls and best-practice measures to minimise source strength.

Table 9 - Measures used on site to control Dust/Particulates

Abatement Measure	Description / Effect	Overall consideration and implementation
Preventative Measures		
Enclosure within a building	Creating a solid barrier between the source of dust and particulates and receptors is likely to be the most effective method of control, provided that the building entrances and exits are well managed.	This is an expensive option for the waste being managed. It is not often cost effective to provide a building for this waste stream. Solid barriers will be provided with control measures. The site is leased on short term basis.
Negative pressure extraction	Within enclosed buildings, controlled extraction can be undertaken to ensure a constant negative pressure relative to the outside air. This system should prevent the emission of particulates from any openings in the building. Extracted air should be treated through a suitable filtration system prior to discharge to atmosphere. This method is more frequently applied for odour control.	Not applicable
Dust Extraction Systems	A large variety of abatement technologies exist for the removal of dust and particulates from a flowing gas and have typically	No applicable

Abatement Measure	Description / Effect	Overall consideration and implementation
	been applied to combustion plants and other sites where controlled emissions of particulates occur. These include Electrostatic Precipitators (ESPs), wet scrubbers, baghouses (bag filters), viscous media (e.g. oil) filters and gravitational settling. Although not all of these may be appropriate for dust and particulate suppression at waste management sites, and they cannot be applied to controlling external fugitive emissions, they may be effective when coupled with local exhaust extraction, ventilation or negative pressure extraction systems from enclosed buildings to remove dust and particulates from the airstream.	
Site / process layout in relation to receptors	Locating particulate emitting activities at a greater distance and downwind from receptors.	The site has been designed to locate perimeter bay walls around the operational yard. Dedicated storage bays with dividing walls will minimise wind whip. There are no nearby sensitive residential receptors. No existing issues with current operation.
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-	The site speed restrictions will be 5mph for all vehicles and mobile plant. Anti-idling protocol in place. Banksmen will be used to ensure the efficient flow of traffic, minimise

Abatement Measure	Description / Effect	Overall consideration and implementation
	suspension of particulates by vehicle wheels.	waiting times and reduce unnecessary vehicle manoeuvring.
Minimising drop heights for waste. Use of enclosed chutes for waste drops/end of conveyor transfers and covered skips / storage vessels.	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. Enclosing processes will further reduce dispersion.	The process equipment will be set at defined heights. The loading operator will reduce the height of the drop when moving waste and products.
Sheeting of vehicles	Prevents the escape of debris, dust and particulates from vehicles as they travel.	All incoming loads will be unsheeted once ready to discharge. All waste being removed will be in sheeted vehicles. There is 100m of unadopted road before vehicles enter the public highway.
Good Housekeeping	Having a consistent, regular housekeeping regime will ensure the site is regularly checked and issued remedied to prevent and remove dust and particulate build-up	As part of the daily Site Checks, the TCM checks the site, but all staff are trained to monitor for any debris or dust on the site and instigate cleaning. On a weekly basis (typically on Saturday), a detailed clean will take place which will include the equipment. A road sweeper will be deployed weekly
Hosing of vehicles on exit	May remove some dirt, dust and particulates from the lower parts of vehicles.	All vehicles will be checked when leaving the site to ensure vehicle wheels are cleared. All staff will be trained to check on the vehicles. A hose and brush will be used to clean the wheels. All road vehicles will be washed weekly.
Install a wheel wash	Provides a high pressure wash of vehicle wheels and lower parts (including under body) using a series of jet sprays. More effective if vehicles drive through	This is not currently proposed. There will be a hose and brush provided to clean wheels. This will be reviewed as part of the annual review. No complaints associated with the current use.

Abatement Measure	Description / Effect	Overall consideration and implementation
	the wheel wash slowly in order that there is sufficient time for dirt to be removed	
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.	TCM will review weather forecast at the start of each working week. If the Met Office issue a weather warning, the TCM will decide the action for that particular day(s). This could include ceasing all treatment operations, or increased dust suppression.
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.	Both sites are concreted.
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	Storage height limits are set out in this Management Plan. The process equipment will be set at defined heights. The loading operator will reduce the height of the drop when placing waste into the equipment or when loading HGVs.

Abatement Measure	Description / Effect	Overall consideration and implementation
	should reduce the surface area over which particulates can be mobilised.	
Reduction in operations (waste throughput, vehicle size, operational hours)	Reducing the amount of activity on site, including no tipping, shredding, chipping or screening of high risk loads during windy weather as well as associated traffic movements should result in reduced emissions and re-suspension of dust and particulates from a site.	TCM will review weather forecast at the start of each working week. If the Met Office issue a weather warning, the TCM will decide the action for that particular day(s). This could include ceasing all treatment operations, or increased dust suppression.
Use of wheel wash	Vehicles would exit the site via a wheel wash.	This is currently not used at the site. It is considered unnecessary given the controls in place and the distance that vehicles travel before reaching the highway. There is a low risk of vehicle wheels tracking mud/debris off site.
Remedial Measures		
Netting / micro netting around equipment	Erecting netting around equipment that could give rise to large amounts of dust and particulates may be effective within the site boundary and prevent their dispersion off-site / their re-suspension within the site.	Netting will be considered around the feed hopper if required.

Abatement Measure	Description / Effect	Overall consideration and implementation
On-site sweeping	Sweeping could be effective in managing larger debris, dust and particulates but may also cause the mobilisation of smaller particles. Road sweeping vehicles damp down dust and particulates whilst brushing and collecting dust and particulates from the road surface, particularly at the kerbside.	The site will be cleaned daily. A trailer and bowser will be used to clean both yards. If necessary, a road sweeper will be deployed.
Site perimeter netting / micro netting	Erecting netting around the site perimeter may capture released debris and dust and particulates prior to it being dispersed off-site.	Netting will be considered around the feed hopper if required.
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.	Dust suppression provided around the site to dampen stockpiles and yard. A bowser will be deployed during the drier months to clean areas not covered by suppression system.
Water suppression with mist sprays	Installation of mist sprays around sites, at building entrances/exits and within buildings at point source emissions like conveyors, trommels etc. It can also assist in the damping down of dust and	Dust suppression provided around the site to dampen stockpiles and yard. A bowser will be deployed during the drier months to clean areas not covered by suppression system.

Abatement Measure	Description / Effect	Overall consideration and implementation
	particulates, therefore, reducing emissions from site.	
Water suppression with bowser	Using bowsers is a quick method of damping down large areas of the site with large water jets. This method could also be used on easy-to-clean, impermeable concrete surfaces.	A bowser will be deployed during the drier months to clean areas not covered by suppression system.
Shaker grids	Similar to cattle grids, these are installed at a site entrance and exit. The movement of vehicles over the grids shakes dust and particulates from the wheels, thus removing them before vehicles enter the site.	Not necessary.
Water Cannons	Water cannons provide a means for delivery of powerful water streams from a water truck. With variable nozzles, the spray pattern can be controlled and varied between jet and fog. Typical water flows are up to 5000 litres per minute. Water cannons are most often used for fire protection, mining operations, heavy machinery wash down, cleaning and dust and particulate	Water cannons are usually deployed on sites that store materials outside, for example construction waste and aggregates. They are considered unnecessary for this site.

Abatement Measure	Description / Effect	Overall consideration and implementation
	abatement.	
Screening of buildings / reducing large apertures using plastic strips	Installing plastic strips to cover entrances/exits to buildings may reduce emissions of dust and particulates dispersing through doorways.	Not applicable.
Application of CMA / chemical suppressant	Diluted Calcium Magnesium Acetate (CMA) or other chemical based dust suppressant is regularly applied by spraying using a back-pack applicator for small areas or by road sweeper to cover larger areas. CMA acts as a suppressant with the aim of reducing dust and particulate re-suspension and hence ambient concentrations.	Typically applied to stockpiles stored outside. They are considered unnecessary for this site.
Heavy Water	Heavy water is used to improve the compaction and stability and reduce dust and particulates on unsealed roads or areas of land. Ideally it is blended into the road construction material as the road is constructed, but where this is not possible it can be sprayed onto the top of the road. Heavy water combines fast acting	There are no proposals to utilise heavy water at the site.

Abatement Measure	Description / Effect	Overall consideration and implementation
	wetting agents with polymer binders, to allow penetration deep into the material and to 'agglomerate' the dust and particles together.	
Foam Suppression	The aggregate and mining industries frequently use foam suppression for the control of dust and particulate emissions, mixing the foam with broken material to increase efficiency. Foaming agents can be added to increase the efficiency of dust and particulate reduction. Foam suppression has seen increased attention in recent years and has previously been applied to waste transfer facilities where crushing of waste occurs. If using foam suppression to control dust and particulates from waste drops, the foam must be entrained within the waste material and as such must be injected prior to dropping the waste rather than at the bottom of the drop.	There are no proposals to utilise foam suppression at the site.

4 REPORTING AND COMPLAINTS

4.1 The Site Manager has the overall responsibility for reporting and dealing with complaints.

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

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

4.4 When the site receives a complaint, a record will be provided in the Site Diary.

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

4.6 The TCM will review the activities that may have given rise to the complaint. Other actions will include:

- Review of site diary and check for any an unusual regional weather events occurring during the day on which the compliant was made, for example Saharan dust storms.
- Review site diary and establish what site activities were taking place at the time the complaint even occurred.
- Review waste types accepted that day.
- Identify whether there were any other activities in the area taking place that could have generated dust e.g. road works or construction works.
- If it is established that the emissions were attributable to activities being undertaken at the site, as necessary review the relevant operational procedures and implement improvements and provide additional training to site.
- The action taken will be reported to the Environment Agency.

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

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

4.9 The TCM will report all findings to the senior management team at the monthly meeting, or sooner if the complaint findings require urgent intervention.

4.10 If the site receives several substantiated complaints, the operator will engage the services of an Air Quality specialist to review the site operations and update this DEMP accordingly. A substantiated complaint is one where the TCM has visited the complainant and confirmed that dust has left the site boundary and impacted their

property (glass dust on cars, windows etc). The EA may also provide substantiated complaints.

Engagement with the Community

4.11 The operator has existing presence in this estate. The immediate neighbours will be contacted, and direct dial telephone details provided for the TCM and main officer number. Email contact details will also be provided.

Appendix A

Reporting Forms

Daily Site Checks Form (from EMS-FR-01)

Date						
Checked By (Initials)						
Weather						
Gates and boundary (walls and fences)						
Evidence of vandalism						
Capacity of Quarantine Area (% full)						
Storage volumes:						
Dust Suppression:						
Signage clear and intact						
Fuel Tank						
Plant – general condition						
Concrete Bay Walls						
Concrete surface						
Local Amenity (dust, mud, noise)	8.00	10.00	12.00	14.00	16.00	18.00
Site Entrance						
Salamons Way – Between Sites						
Operational Area						
FQA clear						
Fire Extinguishers						
Mobile Plant Parking at end of day						
Actions						
Report any defects to the TCM immediately						

Incident / Complaint Form (taken from EMS-FR-02)

Incident Date and Time		**Location**	
Details of Incident / Complaint *Including complaints*			
Was anyone else aware of this – other witnesses? *If so who?*			
Cause of Incident			
Action required to prevent the incident from happening again			
Responsible Person & Date *Who will implement actions needed? When is the action to be taken?*			
Was there any significant pollution or environmental damage to land, water or protected areas – *for example: dust, litter or noise pollution outside the site or spillage of polluting liquids onto the ground, or into a drain? If so what?*			
Is there a continuing threat? Yes / No			
If there is a continuing threat, has the Environment Agency or other relevant body such as emergency services been informed?	Who did you phone? At what time did you phone? Results of phone call (Actions)		
Feedback provided to Complainant	Yes/No Date		

Name **Signature**	